

Mr. Patrick Laux
Thunderbird Products, Inc.
2200 Monroe Street
Decatur, Indiana 46733

Re: **001-11987**
First Significant Source Modification to:
Part 70 Permit No.: T001-5903-00031

Dear Mr. Laux,

Thunderbird Products, Inc. was issued a Part 70 Permit on October 14, 1999 for the operation of their pleasure boat manufacturing and repair operation. A letter requesting changes to this permit was received on March 8, 2000. Pursuant to the provisions of 326 IAC 2-7-10.5 the following emission units are approved for construction at the source:

- (a) Five (5) gel coating/resin stationary booths, identified as STB7, STB8, STB9, STB10 and STB11, each with a maximum capacity of 0.025 boat units per hour, each using dry filters as particulate matter overspray control, and each exhausting to stacks/vents 029, 030, 031, 032, and 036, respectively;
- (b) Three (3) paint spray booths, identified as SB6, SB7 and SB8, each with a maximum capacity of 0.025 boat units per hour, each using dry filters as particulate matter overspray control, and each exhausting to stacks/vents 033, 034, and 035, respectively;
- (c) One (1) assembly, subassembly, upholstery area, processing a maximum of 0.25 boat units per hour, and exhausting to atmosphere;
- (d) Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) Btu per hour;
- (e) Paved and unpaved roads and parking lots with public access;
- (f) Boat cavity foam filling operations.

The following construction conditions are applicable to the proposed project:

General Construction Conditions

1. The data and information supplied with the application shall be considered part of this source modification approval. Prior to any proposed change in construction which may affect the potential to emit (PTE) of the proposed project, the change must be approved by the Office of Air Management (OAM).
2. This approval to construct does not relieve the Permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal

requirements.

3. Effective Date of the Permit
Pursuant to IC 13-15-5-3, this approval becomes effective upon its issuance.
4. Pursuant to 326 IAC 2-1.1-9 and 326 IAC 2-7-10.5(i), the Commissioner may revoke this approval if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.
5. All requirements and conditions of this construction approval shall remain in effect unless modified in a manner consistent with procedures established pursuant to 326 IAC 2.
6. Pursuant to 326 IAC 2-7-10.5(l) the emission units constructed under this approval shall not be placed into operation prior to revision of the source's Part 70 Operating Permit to incorporate the required operation conditions.

The proposed operating conditions applicable to these emission units are attached. These proposed operating conditions shall be incorporated into the Part 70 operating permit as an administrative amendment in accordance with 326 IAC 2-7-10.5(l)(1) and 326 IAC 2-7-11.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter, please contact Linda Quigley, c/o OAM, 100 North Senate Avenue, P.O. Box 6015, Indianapolis, Indiana, 46206-6015, or call (973) 575-2555, ext. 3284 or dial (800) 451-6027, press 0 and ask for 3-6878.

Sincerely,

Paul Dubenetzky, Chief
Permits Branch
Office of Air Management

Attachments
LQ / EVP

cc: File - Adams County
U.S. EPA, Region V
Adams County Health Department
Air Compliance Section Inspector - Jim Thorpe
Compliance Data Section - Karen Nowak
Administrative and Development - Janet Mobley
Technical Support and Modeling - Michelle Boner

PART 70 OPERATING PERMIT OFFICE OF AIR MANAGEMENT

**Thunderbird Products, Inc.
2200 Monroe Street
Decatur, Indiana 46733**

(herein known as the Permittee) is hereby authorized to operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this permit.

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

Operation Permit No.: T001-5903-00031	
Issued by: Janet G. McCabe, Assistant Commissioner Office of Air Management	Issuance Date: October 14, 1999

First Significant Source Modification: 001-11987-00031	Pages Affected: 2, 3, 3a, 4, 5, 27 - 31, 31a - 31j
Issued by: Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date:

TABLE OF CONTENTS

A SOURCE SUMMARY

- A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]
- A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)]
- A.3 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-7-4(c)]
- A.4 Part 70 Permit Applicability [326 IAC 2-7-2]

B GENERAL CONDITIONS

- B.1 Permit No Defense [326 IAC 2-1-10] [IC 13]
- B.2 Definitions [326 IAC 2-7-1]
- B.3 Permit Term [326 IAC 2-7-5(2)]
- B.4 Enforceability [326 IAC 2-7-7(a)]
- B.5 Termination of Right to Operate [326 IAC 2-7-10] [326 IAC 2-7-4(a)]
- B.6 Severability [326 IAC 2-7-5(5)]
- B.7 Property Rights or Exclusive Privilege [326 IAC 2-7-5(6)(D)]
- B.8 Duty to Supplement and Provide Information [326 IAC 2-7-4(b)] [326 IAC 2-7-5(6)(E)]
- B.9 Compliance with Permit Conditions [326 IAC 2-7-5(6)(A)] [326 IAC 2-7-5(6)(B)]
- B.10 Certification [326 IAC 2-7-4(f)] [326 IAC 2-7-6(1)]
- B.11 Annual Compliance Certification [326 IAC 2-7-6(5)]
- B.12 Preventive Maintenance Plan [326 IAC 2-7-5(1),(3)and (13)] [326 IAC 2-7-6(1)and(6)]
- B.13 Emergency Provisions [326 IAC 2-7-16]
- B.14 Permit Shield [326 IAC 2-7-15]
- B.15 Multiple Exceedances [326 IAC 2-7-5(1)(E)]
- B.16 Deviations from Permit Requirements and Conditions [326 IAC 2-7-5(3)(C)(ii)]
- B.17 Permit Modification, Reopening, Revocation and Reissuance, or Termination
- B.18 Permit Renewal [326 IAC 2-7-4]
- B.19 Permit Amendment or Modification [326 IAC 2-7-11] [326 IAC 2-7-12]
- B.20 Permit Revision Under Economic Incentives and Other Programs
- B.21 Changes Under Section 502(b)(10) of the Clean Air Act [326 IAC 2-7-20(b)]
- B.22 Operational Flexibility [326 IAC 2-7-20]
- B.23 Construction Permit Requirement [326 IAC 2]
- B.24 Inspection and Entry [326 IAC 2-7-6(2)]
- B.25 Transfer of Ownership or Operation [326 IAC 2-1-6] [326 IAC 2-7-11]
- B.26 Annual Fee Payment [326 IAC 2-7-19] [326 IAC 2-7-5(7)]

C SOURCE OPERATION CONDITIONS

Emission Limitations and Standards [326 IAC 2-7-5(1)]

- C.1 Particulate Matter Emission Limitations For Processes with Process Weight Rates
- C.2 Opacity [326 IAC 5-1]
- C.3 Open Burning [326 IAC 4-1] [IC 13-17-9]
- C.4 Incineration [326 IAC 4-2] [326 IAC 9-1-2]
- C.5 Fugitive Dust Emissions [326 IAC 6-4]
- C.6 Operation of Equipment [326 IAC 2-7-6(6)]
- C.7 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61.140]

Testing Requirements [326 IAC 2-7-6(1)]

- C.8 Performance Testing [326 IAC 3-6]

Compliance Monitoring Requirements [326 IAC 2-7-5(1)] [326 IAC 2-7-6(1)]

- C.9 Compliance Schedule [326 IAC 2-7-6(3)]
- C.10 Compliance Monitoring [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]
- C.11 Maintenance of Monitoring Equipment [326 IAC 2-7-5(3)(A)(iii)]

- C.12 Monitoring Methods [326 IAC 3]
- C.13 Pressure Gauge Specifications

Corrective Actions and Response Steps [326 IAC 2-7-5] [326 IAC 2-7-6]

- C.14 Emergency Reduction Plans [326 IAC 1-5-2] [326 IAC 1-5-3]
- C.15 Risk Management Plan [326 IAC 2-7-5(12)] [40 CFR 68.215]
- C.16 Compliance Monitoring Plan - Failure to Take Response Steps [326 IAC 2-7-5]
- C.17 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5]

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

- C.18 Emission Statement [326 IAC 2-7-5(3)(C)(iii)] [326 IAC 2-7-5(7)] [326 IAC 2-7-19(c)]
- C.19 Monitoring Data Availability [326 IAC 2-7-6(1)] [326 IAC 2-7-5(3)]
- C.20 General Record Keeping Requirements [326 IAC 2-7-5(3)]
- C.21 General Reporting Requirements [326 IAC 2-7-5(3)(C)]

- D.1 FACILITY OPERATION CONDITIONS** - four stationary booths (STB1, STB2, STB3 and STB4), five paint spray booths (SB1, SB2, SB3, SB4 and SB5), three gel coating booths (GSB4, GSB5, and GSB6) and six lamination areas (AV2, AV3, AV4, AV5, AV6, and AV7)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

- D.1.1 Volatile Organic Compounds (VOC) - General Reduction [326 IAC 8-1-6]
- D.1.2 PSD Minor Limit [326 IAC 2-2] [40 CFR 52.21]
- D.1.3 Particulate Matter (PM) [326 IAC 6-3-2(c)]
- D.1.4 Preventive Maintenance Plan [326 IAC 2-7-4(c)(9)]

Compliance Determination Requirements

- D.1.5 Testing Requirements [326 IAC 2-7-6(1)]
- D.1.6 Volatile Organic Compounds (VOC)
- D.1.7 VOC Emissions
- D.1.8 Particulate Matter

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

- D.1.9 Monitoring

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

- D.1.10 Record Keeping Requirements
- D.1.11 Reporting Requirements

- D.2 FACILITY OPERATION CONDITIONS** - Five (5) stationary booths, three (3) paint spray booths

Emission Limitations and Standards [326 IAC 2-7-5(1)]

- D.2.1 New Source Toxics Control [326 IAC 2-4.1-1]
- D.2.2 PSD Minor Limit [326 IAC 2-2] [40 CFR 52.21]
- D.2.3 Particulate Matter (PM) [326 IAC 6-3-2(c)]
- D.2.4 Volatile Organic Compounds (VOC) - General Reduction [326 IAC 8-1-6]
- D.2.5 Preventive Maintenance Plan [326 IAC 2-7-4(c)(9)]

Compliance Determination Requirements

- D.2.6 Testing Requirements [326 IAC 2-7-6(1)]
- D.2.7 Volatile Organic Compounds (VOC)
- D.2.8 HAP Emissions
- D.2.9 VOC Emissions
- D.2.10 Particulate Matter

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.2.11 Monitoring

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.2.12 Record Keeping Requirements

D.2.13 Reporting Requirements

D.3 FACILITY OPERATION CONDITIONS One (1) assembly, subassembly, upholstery area

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.3.1 Volatile Organic Compounds (VOC) - General Reduction [326 IAC 8-1-6]

D.3.2 PSD Minor Limit [326 IAC 2-2] [40 CFR 52.21]

D.3.3 Preventive Maintenance Plan [326 IAC 2-7-4(c)(9)]

Compliance Determination Requirements

D.3.4 Testing Requirements [326 IAC 2-7-6(1)]

D.3.5 Volatile Organic Compounds (VOC)

D.3.6 VOC Emissions

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.3.7 Record Keeping Requirements

D.3.8 Reporting Requirements

Certification Form

Emergency/Deviation Form

Quarterly Report Form

Quarterly Compliance Report Forms

SECTION A

SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Management (OAM), and presented in the permit application. The information describing the source contained in conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

The Permittee owns and operates a source constructed in 1987 and manufactures fiberglass pleasure boats. The process involves fiberglass lamination, gel coating, wood/plastic working, assembly and spray painting.

Responsible Official: Jim Laux
Source Address: 2200 Monroe Street, Decatur, IN 46733
Mailing Address: 2200 Monroe Street, Decatur, IN 46733
Phone Number: (219) 724-9111
SIC Code: 3732 - Boat building
County Location: Adams
County Status: Attainment for all criteria pollutants
Source Status: Part 70 Permit Program
Minor Source, under PSD or Emission Offset Rules;
Major Source, Section 112 of the Clean Air Act

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]

This stationary source consists of the following emission units and pollution control devices:

- (a) Three (3) gel coating booths, identified as GSB4, GSB5, and GSB6, with a maximum capacity of 0.13 boats per hour per booth, using dry filters as control, and exhausting to stacks/vents #10, #11, and #12.
- (b) Four (4) stationary resin and foam filling booths, identified as, STB1, STB2, STB3, and STB4, with a maximum capacity of 0.005 boats per hour per booth, using dry filters as control, and exhausting to stacks/vents #13, #14, #15, and #16.
- (c) Five (5) IMRON paint spray booths, identified as, SB1, SB2, SB3, SB4, and SB5, with a maximum capacity of 0.078 boats per hour per booth, using dry filters as control, and exhausting to stacks/vents, #18, #19, #20, #21, and #22.
- (d) Six (6) lamination and foam filling areas, identified as: AV2, AV3, AV4, AV5, AV6, and AV7, with a maximum capacity of 0.13 boats per hour per booth, using dry filters as control, and exhausting to stacks/vents, #3, #4, #5, #6, #7, and #8.
- (e) Five (5) gel coating/resin stationary booths, identified as STB7, STB8, STB9, STB10 and STB11, each with a maximum capacity of 0.025 boat units per hour, each using dry filters as particulate matter overspray control, and each exhausting to stacks/vents #029, #030, #031, #032 and #036, respectively.
- (f) Three (3) paint spray booths, identified as SB6, SB7, and SB8, each with a maximum capacity of 0.025 boat units per hour, each using dry filters as particulate matter overspray control, and each exhausting to stacks/vents #033, #034, and #035, respectively.

- (g) One (1) assembly, subassembly, upholstery area, processing a maximum of 0.25 boat units per hour, and exhausting to four (4) vents, identified as #037, #038, #039, and #040.

A.3 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-7-4(c)]
[326 IAC 2-7-5(15)]

This stationary source also includes the following insignificant activities which are specifically regulated, as defined in 326 IAC 2-7-1(21):

- (a) Natural gas-fired combustion sources (fourteen space heaters H1 through H14 and two (2) gel spray booth heaters, SBH1 and SBH2) with heat input equal to or less than 10 MMBtu per hour each.
- (b) Eight (8) storage tanks with capacity less than or equal to 1000 gallons and annual throughput less than 12,000 gallons.
- (c) Cleaners and solvents characterized as follows: a) having a vapor pressure equal to or less than 2.0 kPa measured at 38 degrees C or b) having a vapor pressure equal to or less than 0.7 kPa measured at 20 degrees C.
- (d) Brazing, cutting, soldering, welding equipment and activities not resulting in HAPs emissions.
- (e) Two acetone recovery systems T4 and T6 with batch capacity less than 100 gallons.
- (f) Water bases adhesives that are less than 5% by volume of VOCs excluding HAPs.
- (g) Cut/trim, grinding, machining and wood working equipment and controlled with baghouses BH1 and BH2.
- (h) Other categories with emissions below insignificant thresholds:
 - (1) A wood/plastic working shop identified as BH3, equipped with one (1) baghouse for particulate control, with 99.95% efficiency and exhausting to stack/vent, #17.
 - (2) Activities related to research and development with VOC emissions below 15 pounds per day.
 - (3) Return services limited to minor patching with gel resin, paint touch-up.
 - (4) Boat cavity foam filling operations.
- (i) Paved and unpaved roads and parking lots with public access.

A.4 Part 70 Permit Applicability [326 IAC 2-7-2]

This stationary source is required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) because:

- (a) It is a major source, as defined in 326 IAC 2-7-1(22).
- (b) It is a source in a source category designated by the United States Environmental Protection Agency (USEPA) under 40 CFR 70.3 (Part 70 Applicability).

Facility Description [326 IAC 2-7-5(15)]

- a) Three (3) gel coating booths, identified as GSB4, GSB5, and GSB6, with a maximum capacity of 0.13 boats per hour per booth using dry filters as control, and exhausting to stacks/vents #10, #11, and #12.
- b) Four (4) stationary resin and foam filling booths, identified as STB1, STB2, STB3, and STB4, with a maximum capacity of 0.005 boats per hour per booth, using dry filters as control, and exhausting to stacks/vents #13, #14, #15, and #16.
- c) Five (5) IMRON paint spray booths, identified as SB1, SB2, SB3, SB4, and SB5, with a maximum capacity of 0.078 boats per hour per booth, using dry filters as control, and exhausting to stacks/vents #18, #19, #20, #21, and #22.
- d) Six (6) lamination and foam filling areas, identified as: AV2, AV3, AV4, AV5, AV6, and AV7, with a maximum capacity of 0.13 boats per hour per booth, using dry filters as control, and exhausting to stacks/vents #3, #4, #5, #6, #7, and #8.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.1.1 Volatile Organic Compounds (VOC) - General Reduction [326 IAC 8-1-6]

Pursuant to the construction permit CP (01) 1658 issued in October 20, 1987, this source is subject to BACT requirements for VOC emissions. The current BACT requirements for fiberglass operations have been determined to be similar to the MACT determination under 326 IAC 2-1-3.4. Therefore, pursuant to the MACT determination under 326 IAC 2-1-3.4 and Construction Permit CP (01) 1658 issued in October 20, 1987, operating conditions for the fiberglass and painting operations shall be the following:

- (a) Monthly usage by weight, volatile organic content, method of application, and other emission reduction techniques for each gel coat, resin, and paint shall be recorded. Volatile organic compound emissions shall be calculated by multiplying the usage of each gel coat and resin by the emission factor that is appropriate for the monomer content, method of application, and other emission reduction techniques for each gel coat and resin, and summing the emissions for all gel coats and resins. Emission factors shall be obtained from the reference approved by IDEM, OAM.
- (b) Until such time that new emissions information is made available by U.S. EPA in its AP-42 document or other U.S. EPA-approved form, emission factors shall be taken from the following reference approved by IDEM, OAM: "CFA Emission Models for the Reinforced Plastics Industries", Composites Fabricators Association, February 28, 1998, or its updates, and shall not exceed 32.3% styrene emitted per weight of gel coat applied and 17.7% styrene emitted per weight of resin applied. For the purposes of these emission calculations, monomer in resins and gel coats that is not styrene shall be considered as styrene on an equivalent weight basis. Emission factors for methyl methacrylate may be obtained from the "Unified Emission Factors for Open Molding of Composites" which allows for specific emission determinations for methyl methacrylate.
- (c) Resins and gel coats used, including filled resins and tooling resins and gel coats, shall be limited to maximum monomer contents of 35 percent (35%) by weight for resins, 37 percent (37%) by weight for gel coats or their equivalent on an emissions mass basis. Monomer contents shall be calculated on a neat basis, i.e., excluding any filler. Compliance with these monomer content limits shall be demonstrated on a monthly basis.

The use of resins with monomer contents lower than 35%, gel coats with monomer contents lower than 37%, and/or additional emission reduction techniques approved by IDEM, OAM, may be used to offset the use of resins with monomer contents higher than 35%, and/or gel coats with monomer contents higher than 37%. Examples of other techniques include, but are not limited to, lower monomer content resins and gel coats, closed molding, vapor suppression, vacuum bagging, controlled spraying, or installing a control device with an overall reduction efficiency of 95%. This is allowed to meet the monomer content limits for resins and gel coats, and shall be calculated on an equivalent emissions mass basis as shown below:

$$\frac{(\text{Emissions from } >35\% \text{ resin or } >37\% \text{ gel coat}) - (\text{Emissions from } 35\% \text{ resin or } 37\% \text{ gel coat})}{(\text{Emissions from } 35\% \text{ resin or } 37\% \text{ gel coat}) - (\text{Emissions from } <35\% \text{ resin, } <37\% \text{ gel coat, and/or other emission reduction techniques})}$$

Where: Emissions, lb or ton = M (mass of resin or gel coat used, lb or ton) * EF (Monomer emission factor for resin or gel coat used, %);

EF, Monomer emission factor = emission factor, expressed as % styrene emitted per weight of resin applied, which is indicated by the monomer content, method of application, and other emission reduction techniques for each gel coat and resin used.

- (d) Flow coatlers, a type of non-spray application technology of a design and specifications to be approved by IDEM, OAM, shall be used in the following manner:

- (1) to apply 50% of all neat resins within 6 months of commencement of operation.
- (2) to apply 100% of all neat resins used within 1 year of commencement of operation.

If after 1 year of operation it is not possible to apply a portion of neat resins with flow coatlers, equivalent emissions reductions must be obtained via use of other techniques, such as those listed in Condition D.1.1(c) above, elsewhere in the process.

- (e) Optimized spray techniques according to a manner approved by IDEM shall be used for gel coats and filled resins (where fillers are required for corrosion or fire retardant purposes) at all times. Optimized spray techniques include, but are not limited to, the use of airless, air-assisted airless, high volume low pressure (HVLP), or other spray applicators demonstrated to the satisfaction of IDEM, OAM, to be equivalent to the spray applicators listed above.

HVLP spray is the technology used to apply material to substrate by means of application equipment that operates between one-tenth (0.1) and ten (10) pounds per square inch gauge (psig) air pressure measured dynamically at the center of the air cap and at the air horns of the spray system.

- (f) The listed work practices shall be followed:

- (1) To the extent possible, a non-VOC, non-HAP solvent shall be used for cleanup.
- (2) Cleanup solvent containers used to transport solvent from drums to work stations shall be closed containers having soft gasketed spring-loaded closures.
- (3) Cleanup rags saturated with solvent shall be stored, transported, and disposed of in containers that are closed tightly.
- (4) The spray guns used shall be the type that can be cleaned without the need for spraying the solvent into the air.

- (5) All solvent sprayed during cleanup or resin changes shall be directed into containers. Such containers shall be closed as soon as solvent spraying is complete. The waste solvent shall be handled in such a manner that evaporation is minimized, and managed in accordance with applicable solid or hazardous waste requirements.
- (6) Storage containers used to store VOC- and/or HAP- containing materials shall be kept covered when not in use.

D.1.2 PSD Minor Limit [326 IAC 2-2] [40 CFR 52.21]

Pursuant to PC (01) 1658, issued on October 20, 1987, the entire source shall be limited to less than 250 tons of VOC emissions per twelve consecutive month period. This limitation includes equipment listed in sections D.1, D.2 and D.3. Compliance with this condition shall be based on the conditions of D.1.1 (a) and (b).

Any change or modification which may increase source wide VOC emissions to 250 tons per 12 consecutive month period, or greater, shall require OAM approval before such change can take place.

Compliance with this limit makes 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable.

D.1.3 Particulate Matter (PM) [326 IAC 6-3-2(c)]

Pursuant to PC (01) 1658, issued on October 20 1987, the PM from the nine (9) booths identified as STB1, STB2, STB3, STB4, SB1, SB2, SB3, SB4, and SB5, shall not exceed the pound per hour emission rate established as E in the following formula:

Interpolation and extrapolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67}$$

where E = rate of emission in pounds per hour; and
P = process weight rate in tons per hour

D.1.4 Preventive Maintenance Plan [326 IAC 2-7-4(c)(9)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for this facility and any control devices.

Compliance Determination Requirements

D.1.5 Testing Requirements [326 IAC 2-7-6(1),(6)]

The Permittee is not required to test this facility by this permit. However, IDEM may require compliance testing at any specific time when necessary to determine if the facility is in compliance. If testing is required by IDEM, compliance with the PM limits specified in Conditions D.1.3. shall be determined by a performance test conducted in accordance with Section C - Performance Testing.

D.1.6 Volatile Organic Compounds (VOC)

Compliance with the VOC content and usage limitations contained in Conditions D.1.1 shall be determined pursuant to 326 IAC 8-1-4(a)(3) and 326 IAC 8-1-2(a) using formulation data supplied by the coating manufacturer. IDEM, OAM, reserves the authority to determine compliance using Method 24 in conjunction with the analytical procedures specified in 326 IAC 8-1-4.

D.1.7 VOC Emissions

Compliance with Condition D.1.2 shall be demonstrated within 30 days of at the end of each month based on the total volatile organic compound usage for the most recent twelve (12) month period.

All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.1.8 Particulate Matter (PM)

Pursuant to PC (01) 1658 issued in October 20, 1987, the dry filters for PM control shall be in operation at all times when these nine (9) booths identified as STB1, STB2, STB3, STB4, SB1, SB2, SB3, SB4, and SB5 are in operation.

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.1.9 Monitoring

- (a) Daily inspections shall be performed to verify the placement, integrity and particle loading of the filters. To monitor the performance of the dry filters, weekly observations shall be made of the overspray from the surface coating booth stacks associated with STB1, STB2, STB3, STB4, SB1, SB2, SB3, SB4, and SB5, while one or more of the booths are in operation. The Compliance Response Plan shall be followed whenever a condition exists which should result in a response step. Failure to take response steps in accordance with Section C - Compliance Monitoring Plan - Failure to Take Response Steps, shall be considered a violation of this permit.
- (b) Monthly inspections shall be performed of the coating emissions from the stack and the presence of overspray on the rooftops and the nearby ground. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when a noticeable change in overspray emission, or evidence of overspray emission is observed. The Compliance Response Plan shall be followed whenever a condition exists which should result in a response step. Failure to take response steps in accordance with Section C - Compliance Monitoring Plan - Failure to Take Response Steps, shall be considered a violation of this permit.
- (c) Additional inspections and preventive measures shall be performed as prescribed in the Preventive Maintenance Plan.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.1.10 Record Keeping Requirements

- (a) To document compliance with Condition D.1.2(a), the Permittee shall maintain records in accordance with (1) through (4) below. Records maintained for (1) through (4) shall be taken monthly and shall be complete and sufficient to establish compliance with the volatile organic compound emission limit established in Condition D.1.2.
 - (1) The usage by weight and monomer content of each resin and gel coat. Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used;
 - (2) A log of the monthly usage;
 - (3) Method of application and other emission reduction techniques for each resin and gel coat used;
 - (4) The calculated total volatile organic compound emissions from resin and gel coat use for each month.
- (b) To document compliance with Conditions D.1.8, the Permittee shall maintain a log of daily overspray observations, daily and weekly inspections, and those additional inspections prescribed by the Preventive Maintenance Plan.
- (c) To document compliance with Condition D.1.9, the Permittee shall maintain records of daily inspections of the filters, weekly observation of the overspray from the surface coating booth stacks, and monthly inspections of the coating emissions from the stack and the presence of overspray on the rooftops and the nearby ground.
- (d) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit..

D.1.11 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.1.2 (a) and (b) shall be submitted to the addresses listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported.

SECTION D.2 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]

- a) Five (5) gel/resin coating stationary booths, identified as STB7, STB8, STB9, STB10, and STB11, each with a maximum capacity of 0.025 boats per hour, each using dry filters as particulate matter overspray control, and each exhausting to stacks/vents 029, 030, 031, 032, and 036, respectively;
 - b) Three (3) paint spray booths, identified as SB6, SB7 and SB8, each with a maximum capacity of 0.025 boat units per hour, each using dry filters as particulate matter overspray control, and each exhausting to stacks/vents 033, 034, and 035, respectively.
- (The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions).

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.2.1 New Source Toxics Control [326 IAC 2-4.1-1]

Pursuant to the New Source Toxics Control under 326 IAC 2-4.1-1, operating conditions for the five (5) new gel coating/resin stationary booths, identified as STB7, STB8, STB9, STB10, and STB11 are listed below. Adherence to these conditions will also satisfy 326 IAC 8-1-6 (BACT).

- (a) Use of resins, gel coats and clean-up solvents, as well as VOC delivered to the applicators, shall be limited such that the total combined hazardous air pollutant (HAP) emissions are limited to less than one hundred (100) tons per twelve (12) consecutive month period. Compliance with this limit shall be determined based upon the following criteria:
 - (1) Monthly usage by weight, monomer content, method of application, and other emission reduction techniques for each gel coat and resin shall be recorded. VOC emissions shall be calculated by multiplying the usage of each gel coat and resin by the emission factor that is appropriate for the monomer content, method of application, and other emission reduction techniques for each gel coat and resin, and summing the emissions for all gel coats and resins. Emission factors shall be obtained from the reference approved by IDEM, OAM.
 - (2) Until such time that new emissions information is made available by U.S. EPA in its AP-42 document or other U.S. EPA- approved form, emission factors shall be taken from the following reference approved by IDEM, OAM: "CFA Emission Models for the Reinforced Plastics Industries," Composites Fabricators Association, February 28, 1998, or its update, and shall not exceed 32.3% styrene emitted per weight of gel coat applied and 17.7% styrene emitted per weight of resin applied. For the purposes of these emission calculations, monomer in resins and gel coats that is not styrene shall be considered as styrene on an equivalent weight basis. Emission factors for methyl methacrylate may be obtained from the "Unified Emission Factors for Open Molding of Composites" which allows for specific emission determinations for methyl methacrylate.

- (b) Resins and gel coats used, including filled resins and tooling resins and gel coats, shall be limited to maximum monomer contents of 35 percent (35%) by weight for resins and gel coats or their equivalent on an emissions mass basis. Monomer contents shall be calculated on a neat basis, i.e., excluding any filler. Compliance with these monomer content limits shall be demonstrated on a monthly basis.

The use of resins and gel coats with monomer contents lower than 35%, and/or additional emission reduction techniques approved by IDEM, OAM, may be used to offset the use of resins and gel coats with monomer contents higher than 35%. Examples of other techniques include, but are not limited to, lower monomer content resins and gel coats, closed molding, vapor suppression, vacuum bagging, controlled spraying, or installing a control device with an overall reduction efficiency of 95%. This is allowed to meet the monomer content limits for resins and gel coats, and shall be calculated on an equivalent emissions mass basis as shown below:

$$(\text{Emissions from } >35\% \text{ resin or gel coat}) - (\text{Emissions from } 35\% \text{ resin or gel coat}) \leq (\text{Emissions from } 35\% \text{ resin or gel coat}) - (\text{Emissions from } <35\% \text{ resin or gel coat, and other emission reduction techniques}).$$

Where: Emissions, lb or ton = M (mass of resin or gel coat used, lb or ton) * EF
(Monomer emission factor for resin or gel cat used, %):

EF, Monomer emission factor = emission factor, expressed as % styrene emitted per weight of resin applied, which is indicated by the monomer content, method of application, and other emission reduction techniques for each gel coat and resin used.

- (c) Flow coatlers, a type of non-spray application technology of a design and specifications to be approved by IDEM, OAM, shall be used.

If, after 1 year of operation it is not possible to apply a portion of neat resins with flow coatlers, equivalent emissions reductions must be obtained via use of other techniques, such as those listed in (b) above, elsewhere in the process.

- (d) Optimized spray techniques according to a manner approved by IDEM shall be used for gel coats and filled resins (where fillers are required for corrosion or fire retardant purposes) at all times. Optimized spray techniques include, but are not limited to, the use of airless, air-assisted airless, high volume low pressure (HVLP), or other spray applicators demonstrated to the satisfaction of IDEM, OAM, to be equivalent to the spray applicators listed above.

HVLP spray is the technology used to apply material to substrate by means of coating application equipment that operates between one-tenth (0.1) and ten (10) pounds per square inch gauge (psig) air pressure measured dynamically at the center of the air cap and at the air horns of the spray system.

- (e) The listed work practices shall be followed:

- (1) To the extent possible, a non-VOC, non-HAP solvent shall be used for cleanup.
- (2) Cleanup solvent containers used to transport solvent from drums to work stations shall be closed containers having soft gasketed spring-loaded closures.

- (3) Cleanup rags saturated with solvent shall be stored, transported, and disposed of in containers that are closed tightly.
- (4) The spray guns used shall be the type that can be cleaned without the need for spraying the solvent into the air.
- (5) All solvent sprayed during cleanup or resin changes shall be directed into containers, such containers shall be closed as soon as solvent spraying is complete and the waste solvent shall be disposed of in such a manner that evaporation is minimized.
- (6) Storage containers used to store VOC- and/or HAP- containing materials shall be kept covered when not in use.

D.2.2 PSD Minor Limit [326 IAC 2-2] [40 CFR 52.21]

Pursuant to PC (01) 1658, issued on October 20, 1987, the entire source shall be limited to less than 250 tons of VOC emissions per twelve consecutive month period. This limitation includes equipment listed in sections D.1, D.2 and D.3. Compliance with this condition shall be based on the conditions of D.2.1 (a) and (b).

Any change or modification which may increase VOC usage to 250 tons per 12 consecutive month period, or greater, shall require OAM approval before such change can take place.

Compliance with this limit makes 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable.

D.2.3 Particulate Matter (PM) [326 IAC 6-3-2(c)]

The particulate matter (PM) from the paint spray booths and stationary booths shall be limited by the following:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour; and} \\ P = \text{process weight rate in tons per hour}$$

D.2.4 New Facilities: General Reduction Requirements [326 IAC 8-1-6]

Any change or modification which would increase the potential to emit VOC from the paint booths (SB6, SB7 and SB8) to twenty-five (25) tons per year or more, shall obtain prior approval from IDEM, OAM and shall be subject to the requirements of 326 IAC 8-1-6.

D.2.5 Preventive Maintenance Plan [326 IAC 2-7-4(c)(9)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for these facilities and any control devices.

Compliance Determination Requirements

D.2.6 Testing Requirements [326 IAC 2-7-6(1),(6)]

The Permittee is not required to test this facility by this permit. However, IDEM may require compliance testing at any specific time when necessary to determine if the facility is in compliance. If testing is required by IDEM, compliance with the VOC limits specified in D.2.2, PM limits specified in D.2.3. and HAPs limits specified in D.2.1 shall be determined by a performance test conducted in accordance with Section C - Performance Testing.

D.2.7 Volatile Organic Compounds (VOC)

Compliance with the VOC content and usage limitations contained in Conditions D.2.2 shall be determined pursuant to 326 IAC 8-1-4(a)(3) and 326 IAC 8-1-2(a) using formulation data supplied by the coating manufacturer. IDEM, OAM, reserves the authority to determine compliance using Method 24 in conjunction with the analytical procedures specified in 326 IAC 8-1-4.

D.2.8 HAP Emissions

Compliance with Condition D.2.1(a) shall be demonstrated within 30 days of at the end of each month based on the total hazardous air pollutant emissions for the most recent twelve (12) month period.

D.2.9 VOC Emissions

Compliance with Condition D.2.2 shall be demonstrated within 30 days of at the end of each month based on the total volatile organic compound usage for the most recent twelve (12) month period.

D.2.10 Particulate Matter (PM)

The dry filters for PM control shall be in operation at all times when the nine (9) booths identified as STB7, STB8, STB9, STB10, STB11, SB6, SB7, and SB8 are in operation.

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.2.11 Monitoring

- (a) Daily inspections shall be performed to verify the placement, integrity and particle loading of the filters. To monitor the performance of the dry filters, weekly observations shall be made of the overspray from the surface coating booth stacks associated with STB7, STB8, STB9, STB10, STB11, SB6, SB7, and SB8, while one or more of the booths are in operation. The Compliance Response Plan shall be followed whenever a condition exists which should result in a response step. Failure to take response steps in accordance with Section C - Compliance Monitoring Plan - Failure to Take Response Steps, shall be considered a violation of this permit.
- (b) Monthly inspections shall be performed of the coating emissions from the stack and the presence of overspray on the rooftops and the nearby ground. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when a noticeable change in overspray emission, or evidence of overspray emission is observed. The Compliance Response Plan shall be followed whenever a condition exists which should result in a response step. Failure to take response steps in accordance with Section C - Compliance Monitoring Plan - Failure to Take Response Steps, shall be considered a violation of this permit.
- (c) Additional inspections and preventive measures shall be performed as prescribed in the Preventive Maintenance Plan.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.2.12 Record Keeping Requirements

- (a) To document compliance with Condition D.2.1(a), the Permittee shall maintain records in accordance with (1) through (5) below. Records maintained for (1) through (5) shall be taken monthly and shall be complete and sufficient to establish compliance with the hazardous air pollution (HAP) emission limit established in Condition D.2.1.
 - (1) The usage by weight and monomer content of each resin, gel coat, and solvent used. Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used;
 - (2) A log of the month of use;
 - (3) Method of application and other emission reduction techniques for each resin and gel coat used;
 - (4) The individual HAP and combined HAP usage for each month; and
 - (5) The weight of individual HAP and combined HAPs emitted for each compliance period.
- (b) To document compliance with Conditions D.2.2 and D.2.4, the Permittee shall maintain records in accordance with (1) through (5) below. Records maintained for (1) through (5) shall be taken monthly and shall be complete and sufficient to establish compliance with the VOC usage limits and/or the VOC emission limits established in Conditions D.2.2 and D.2.4.
 - (1) The amount, and the VOC content of each coating material and solvent used. Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used. Solvent usage records shall differentiate between those added to coatings and those used as cleanup solvents;
 - (2) A log of the month(s) of use;
 - (3) The cleanup solvent usage for each month;
 - (4) The total VOC usage for each month; and
 - (5) The weight of VOCs emitted for each compliance period.
- (c) To document compliance with Conditions D.2.3 and D.2.10, the Permittee shall maintain a log of daily overspray observations, daily and weekly inspections, and those additional inspections prescribed by the Preventive Maintenance Plan.
- (d) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.2.13 Reporting Requirements

A quarterly summary of the information to document compliance with Conditions D.2.1 and D.2.2 shall be submitted to the addresses listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported.

SECTION D.3 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]

- a) One (1) assembly, subassembly, upholstery area, processing a maximum of 0.25 boat units per hour, and exhausting to four (4) vents, identified as #037, #038, #039, and #040.
(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions).

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.3.1 Volatile Organic Compounds (VOC) - General Reduction [326 IAC 8-1-6]

Pursuant to 326 IAC 8-1-6, the source shall comply with the following best available control technology (BACT) determination:

- (a) The VOC content of the adhesives and sealants applied shall not exceed 9.5 pounds per gallon less water;
- (b) The total VOC input to the assembly, subassembly, upholstery area operations, including any cleanup solvents, shall not exceed 55.9 tons per twelve (12) consecutive month period.
- (c) Proper equipment cleanup and maintenance shall be performed, including containment of any solvent used during equipment cleanup. Such containers shall be closed as soon as cleanup is complete, and any waste solvent shall be disposed of in such a manner that minimizes evaporation.

D.3.2 PSD Minor Limit [326 IAC 2-2] [40 CFR 52.21]

Pursuant to PC (01) 1658, issued on October 20, 1987, the entire source shall be limited to less than 250 tons of VOC emissions per twelve consecutive month period. This limitation includes equipment listed in sections D.1, D.2 and D.3. Compliance with this condition shall be based on the conditions of D.3.1 (a) and (b).

Any change or modification which may increase VOC usage to 250 tons per 12 consecutive month period, or greater, shall require OAM approval before such change can take place.

Compliance with this limit makes 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable.

D.3.3 Preventive Maintenance Plan [326 IAC 2-7-4(c)(9)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for this facility and any control devices.

Compliance Determination Requirements

D.3.4 Testing Requirements [326 IAC 2-7-6(1),(6)]

The Permittee is not required to test this facility by this permit. However, IDEM may require compliance testing at any specific time when necessary to determine if the facility is in compliance. If testing is required by IDEM, compliance with the VOC limits specified in D.3.1 and D.3.2 shall be determined by a performance test conducted in accordance with Section C - Performance Testing.

D.3.5 Volatile Organic Compounds (VOC)

Compliance with the VOC content and usage limitations contained in Conditions D.3.1 shall be determined pursuant to 326 IAC 8-1-4(a)(3) and 326 IAC 8-1-2(a) using formulation data supplied by the coating manufacturer. IDEM, OAM, reserves the authority to determine compliance using Method 24 in conjunction with the analytical procedures specified in 326 IAC 8-1-4.

D.3.6 VOC Emissions

Compliance with Conditions D.3.1 and D.3.2 shall be demonstrated within 30 days of at the end of each month based on the total volatile organic compound usage for the most recent twelve (12) month period.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.3.7 Record Keeping Requirements

- (a) To document compliance with Conditions D.3.1 and D.3.2, the Permittee shall maintain records in accordance with (1) through (5) below. Records maintained for (1) through (5) shall be taken monthly and shall be complete and sufficient to establish compliance with the VOC usage limits and/or the VOC emission limits established in Condition D.3.2.
 - (1) The amount, and the VOC content of each coating material and solvent used. Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used. Solvent usage records shall differentiate between those added to coatings and those used as cleanup solvents;
 - (2) A log of the month(s) of use;
 - (3) The cleanup solvent usage for each month;
 - (4) The total VOC usage for each month; and
 - (5) The weight of VOCs emitted for each compliance period.
- (b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.3.8 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.3.2 shall be submitted to the addresses listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR MANAGEMENT
COMPLIANCE DATA SECTION**

Part 70 Quarterly Report

Source Name: Thunderbird Products, Inc.
Source Address: 2200 Monroe Street, Decatur, Indiana 46733
Mailing Address: 2200 Monroe Street, Decatur, Indiana 46733
Part 70 Permit No.: T001-5903-00031
Facility: entire source including the following booths: GSB4, GSB5, GSB6, AV2, AV3, AV4, AV4, AV5, AV6, AV7, STB1, STB2, STB3, STB4, STB5, STB8, STB9, STB10, STB11, SB1, SB2, SB3, SB4, SB5, SB6, SB7, SB8, and assembly, subassembly, upholstery area.
Parameter: VOC
Limit: less than 250 tons per twelve (12) consecutive month period
(a) When applying gel coats and resins, VOC emissions shall be calculated by multiplying the material usage by the appropriate emission factor based on the monomer content, method of application, and other emission reduction techniques, and summing the emissions for all gel coats and resins.
(b) Until such time that new emissions information is made available by U.S. EPA in its AP-42 document or other U.S. EPA- approved form, emission factors for the gel coat and resin applications shall be taken from the following reference approved by IDEM, OAM: "CFA Emission Models for the Reinforced Plastics Industries," Composites Fabricators Association, February 28, 1998 (updated as the "Unified Emission Factors for Open Molding of Composites" ("CFA Factors", April 1999). For the purposes of these emission calculations, monomer in resins and gel coats that is not styrene shall be considered as styrene on an equivalent weight basis. Emission factors for methyl methacrylate may be obtained from the "Unified Emission Factors for Open Molding of Composites" which allows for specific emission determinations for methyl methacrylate.
(c) When applying VOC solvents other than gel coats and resins, VOC emissions shall be calculated using an emission factor of 2,000 pounds of VOC emitted per ton of VOC used.

YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total
Month 1			
Month 2			
Month 3			

- 9 No deviation occurred in this quarter.
9 Deviation/s occurred in this quarter.
Deviation has been reported on: _____

Submitted by: _____
Title / Position: _____
Signature: _____
Date: _____
Phone: _____

A certification is not required for this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR MANAGEMENT
COMPLIANCE DATA SECTION**

Part 70 Quarterly Report

Source Name: Thunderbird Products, Inc.

Source Address: 2200 Monroe Street, Decatur, IN 46733

Mailing Address: 2200 Monroe Street, Decatur, IN 46733

Part 70 Permit No.: T0015903-00031

Facility: STB7, STB8, STB9, STB10 and STB11

Parameter: Single and Combined Hazardous Air Pollutants (HAPs)

The hazardous air pollutant (HAP) input usage shall be limited such that total combined HAP emissions are limited to less than 100 tons per twelve (12) consecutive month period based on the following:

- (a) When applying gel coats and resins, hazardous air pollutant (HAPs) emissions shall be calculated by multiplying the material usage by the appropriate emission factor based on the monomer content, method of application, and other emission reduction techniques, and summing the emissions for all gel coats and resins.
- (b) Until such time that new emissions information is made available by U.S. EPA in its AP-42 document or other U.S. EPA- approved form, emission factors for the gel coat and resin applications shall be taken from the following reference approved by IDEM, OAM: "CFA Emission Models for the Reinforced Plastics Industries," Composites Fabricators Association, February 28, 1998 (updated as the "Unified Emission Factors for Open Molding of Composites" ("CFA Factors", April 1999). For the purposes of these emission calculations, monomer in resins and gel coats that is not styrene shall be considered as styrene on an equivalent weight basis. Emission factors for methyl methacrylate may be obtained from the "Unified Emission Factors for Open Molding of Composites" which allows for specific emission determinations for methyl methacrylate.
- (c) When applying hazardous air pollutants (HAPs) solvents other than gel coats and resins, hazardous air pollutants (HAPs) emissions shall be calculated using an emission factor of 2,000 pounds of hazardous air pollutants (HAPs) emitted per ton of VOC used.

YEAR: _____

Month	Combined HAPs Emitted This Month (tons)		Combined HAPs Emitted Previous 11 Months (tons)		Combined HAPs Emitted 12 Month Total (tons)	
Month 1						
Month 2						
Month 3						

- 9 No deviation occurred in this quarter.
- 9 Deviation(s) occurred in this quarter.
- 9 Deviation has been reported on: _____

Submitted by: _____

Title/Position: _____

Signature: _____

Date: _____

Phone: _____

A certification is not required for this report.

SECTION D.2 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]

- a) Five (5) gel/resin coating stationary booths, identified as STB7, STB8, STB9, STB10, and STB11, each with a maximum capacity of 0.025 boats per hour, each using dry filters as particulate matter overspray control, and each exhausting to stacks/vents 029, 030, 031, 032, and 036, respectively;
- b) Three (3) paint spray booths, identified as SB6, SB7 and SB8, each with a maximum capacity of 0.025 boat units per hour, each using dry filters as particulate matter overspray control, and each exhausting to stacks/vents 033, 034, and 035, respectively.
(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions).

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.2.1 New Source Toxics Control [326 IAC 2-4.1-1]

Pursuant to the New Source Toxics Control under 326 IAC 2-4.1-1, operating conditions for the five (5) new gel coating/resin stationary booths, identified as STB7, STB8, STB9, STB10, and STB11 are listed below. Adherence to these conditions will also satisfy 326 IAC 8-1-6 (BACT).

- (a) Use of resins, gel coats and clean-up solvents, as well as VOC delivered to the applicators, shall be limited such that the total combined hazardous air pollutant (HAP) emissions are limited to less than one hundred (100) tons per twelve (12) consecutive month period. Compliance with this limit shall be determined based upon the following criteria:
 - (1) Monthly usage by weight, monomer content, method of application, and other emission reduction techniques for each gel coat and resin shall be recorded. VOC emissions shall be calculated by multiplying the usage of each gel coat and resin by the emission factor that is appropriate for the monomer content, method of application, and other emission reduction techniques for each gel coat and resin, and summing the emissions for all gel coats and resins. Emission factors shall be obtained from the reference approved by IDEM, OAM.
 - (2) Until such time that new emissions information is made available by U.S. EPA in its AP-42 document or other U.S. EPA- approved form, emission factors shall be taken from the following reference approved by IDEM, OAM: "CFA Emission Models for the Reinforced Plastics Industries," Composites Fabricators Association, February 28, 1998, or its update, and shall not exceed 32.3% styrene emitted per weight of gel coat applied and 17.7% styrene emitted per weight of resin applied. For the purposes of these emission calculations, monomer in resins and gel coats that is not styrene shall be considered as styrene on an equivalent weight basis.
- (b) Resins and gel coats used, including filled resins and tooling resins and gel coats, shall be limited to maximum monomer contents of 35 percent (35%) by weight for resins and gel coats or their equivalent on an emissions mass basis. Monomer contents shall be calculated on a neat basis, i.e., excluding any filler. Compliance with these monomer content limits shall be demonstrated on a monthly basis.

The use of resins and gel coats with monomer contents lower than 35%, and/or additional emission reduction techniques approved by IDEM, OAM, may be used to offset the use of resins and gel coats with monomer contents higher than 35%. Examples of other techniques include, but are not limited to, lower monomer content resins and gel coats, closed molding, vapor suppression, vacuum bagging, controlled spraying, or installing a control device with an overall reduction efficiency of 95%. This is allowed to meet the monomer content limits for resins and gel coats, and shall be calculated on an equivalent emissions mass basis as shown below:

$$\frac{(\text{Emissions from } >35\% \text{ resin or gel coat}) - (\text{Emissions from } 35\% \text{ resin or gel coat})}{(\text{Emissions from } 35\% \text{ resin or gel coat}) - (\text{Emissions from } <35\% \text{ resin or gel coat, and or other emission reduction techniques})} \leq$$

Where: Emissions, lb or ton = M (mass of resin or gel coat used, lb or ton) * EF
(Monomer emission factor for resin or gel cat used, %):

EF, Monomer emission factor = emission factor, expressed as % styrene emitted per weight of resin applied, which is indicated by the monomer content, method of application, and other emission reduction techniques for each gel coat and resin used.

- (c) Flow coaters, a type of non-spray application technology of a design and specifications to be approved by IDEM, OAM, shall be used.

If, after 1 year of operation it is not possible to apply a portion of neat resins with flow coaters, equivalent emissions reductions must be obtained via use of other techniques, such as those listed in (b) above, elsewhere in the process.

- (d) Optimized spray techniques according to a manner approved by IDEM shall be used for gel coats and filled resins (where fillers are required for corrosion or fire retardant purposes) at all times. Optimized spray techniques include, but are not limited to, the use of airless, air-assisted airless, high volume low pressure (HVLP), or other spray applicators demonstrated to the satisfaction of IDEM, OAM, to be equivalent to the spray applicators listed above.

HVLP spray is the technology used to apply material to substrate by means of coating application equipment that operates between one-tenth (0.1) and ten (10) pounds per square inch gauge (psig) air pressure measured dynamically at the center of the air cap and at the air horns of the spray system.

- (e) The listed work practices shall be followed:

- (1) To the extent possible, a non-VOC, non-HAP solvent shall be used for cleanup.
- (2) Cleanup solvent containers used to transport solvent from drums to work stations shall be closed containers having soft gasketed spring-loaded closures.
- (3) Cleanup rags saturated with solvent shall be stored, transported, and disposed of in containers that are closed tightly.
- (4) The spray guns used shall be the type that can be cleaned without the need for spraying the solvent into the air.
- (5) All solvent sprayed during cleanup or resin changes shall be directed into containers, such containers shall be closed as soon as solvent spraying is

complete and the waste solvent shall be disposed of in such a manner that evaporation is minimized.

- (6) Storage containers used to store VOC- and/or HAP- containing materials shall be kept covered when not in use.

D.2.2 PSD Minor Limit [326 IAC 2-2] [40 CFR 52.21]

- (a) Pursuant to PC (01) 1658, issued on October 20, 1987, the entire source shall be limited to less than 250 tons of VOC emissions per twelve consecutive month period. This limitation includes equipment listed in sections D.1, D.2 and D.3. Any change or modification which may increase VOC usage to 250 tons per 12 consecutive month period, or greater, shall require OAM approval before such change can take place.
- (b) Compliance with this limit makes 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable.

D.2.3 Particulate Matter (PM) [326 IAC 6-3-2(c)]

The particulate matter (PM) from the paint spray booths and stationary booths shall be limited by the following:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour; and} \\ P = \text{process weight rate in tons per hour}$$

D.2.4 Preventive Maintenance Plan [326 IAC 2-7-4(c)(9)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for these facilities and any control devices.

Compliance Determination Requirements

D.2.5 Testing Requirements [326 IAC 2-7-6(1),(6)]

The Permittee is not required to test this facility by this permit. However, IDEM may require compliance testing at any specific time when necessary to determine if the facility is in compliance. If testing is required by IDEM, compliance with the VOC limits specified in D.2.2, PM limits specified in D.2.3. and HAPs limits specified in D.2.1 shall be determined by a performance test conducted in accordance with Section C - Performance Testing.

D.2.6 Volatile Organic Compounds (VOC)

Compliance with the VOC content and usage limitations contained in Conditions D.2.2 shall be determined pursuant to 326 IAC 8-1-4(a)(3) and 326 IAC 8-1-2(a) using formulation data supplied by the coating manufacturer. IDEM, OAM, reserves the authority to determine compliance using Method 24 in conjunction with the analytical procedures specified in 326 IAC 8-1-4.

D.2.7 HAP Emissions

Compliance with Condition D.2.1(a) shall be demonstrated within 30 days of at the end of each month based on the total volatile organic compound usage for the most recent twelve (12) month period.

D.2.8 VOC Emissions

Compliance with Condition D.2.2 shall be demonstrated within 30 days of at the end of each month based on the total volatile organic compound usage for the most recent twelve (12) month period.

D.2.9 Particulate Matter (PM)

The dry filters for PM control shall be in operation at all times when the nine (9) booths identified as STB7, STB8, STB9, STB10, STB11, SB6, SB7, and SB8 are in operation.

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.2.10 Monitoring

- (a) Daily inspections shall be performed to verify the placement, integrity and particle loading of the filters. To monitor the performance of the dry filters, weekly observations shall be made of the overspray from the surface coating booth stacks associated with STB7, STB8, STB9, STB10, STB11, SB6, SB7, and SB8, while one or more of the booths are in operation. The Compliance Response Plan shall be followed whenever a condition exists which should result in a response step. Failure to take response steps in accordance with Section C - Compliance Monitoring Plan - Failure to Take Response Steps, shall be considered a violation of this permit.
- (b) Monthly inspections shall be performed of the coating emissions from the stack and the presence of overspray on the rooftops and the nearby ground. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when a noticeable change in overspray emission, or evidence of overspray emission is observed. The Compliance Response Plan shall be followed whenever a condition exists which should result in a response step. Failure to take response steps in accordance with Section C - Compliance Monitoring Plan - Failure to Take Response Steps, shall be considered a violation of this permit.
- (c) Additional inspections and preventive measures shall be performed as prescribed in the Preventive Maintenance Plan.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.2.11 Record Keeping Requirements

- (a) To document compliance with Condition D.2.1(a), the Permittee shall maintain records in accordance with (1) through (4) below. Records maintained for (1) through (4) shall be taken monthly and shall be complete and sufficient to establish compliance with the hazardous air pollution (HAP) emission limit established in Condition D.2.1.
 - (1) The usage by weight and monomer content of each resin, gel coat, and solvent used. Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used;
 - (2) A log of the month of use;
 - (3) Method of application and other emission reduction techniques for each resin and gel coat used;
 - (4) The total VOC, individual HAP and combined HAP usage for each month; and

- (5) The weight of individual HAP and combined HAPs emitted for each compliance period.
- (b) To document compliance with Condition D.2.2, the Permittee shall maintain records in accordance with (1) through (6) below. Records maintained for (1) through (6) shall be taken monthly and shall be complete and sufficient to establish compliance with the VOC usage limits and/or the VOC emission limits established in Condition D.2.2.
 - (1) The amount, and the VOC content of each coating material and solvent used. Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used. Solvent usage records shall differentiate between those added to coatings and those used as cleanup solvents;
 - (2) A log of the month(s) of use;
 - (3) The cleanup solvent usage for each month;
 - (4) The total VOC usage for each month; and
 - (5) The weight of VOCs emitted for each compliance period.
- (c) To document compliance with Conditions D.2.3 and D.2.9, the Permittee shall maintain a log of daily overspray observations, daily and weekly inspections, and those additional inspections prescribed by the Preventive Maintenance Plan.
- (d) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.2.12 Reporting Requirements

A quarterly summary of the information to document compliance with Conditions D.2.1 and D.2.2 shall be submitted to the addresses listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported.

SECTION D.3 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]

- a) One (1) assembly, subassembly, upholstery area, processing a maximum of 0.25 boat units per hour, and exhausting to the atmosphere.
(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions).

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.3.1 Volatile Organic Compounds (VOC) - General Reduction [326 IAC 8-1-6]

Pursuant to 326 IAC 8-1-6, the source shall comply with the following best available control technology (BACT) determination:

- (a) The VOC content of the adhesives and sealants applied shall not exceed 9.5 pounds per gallon less water;
- (b) The total VOC input to the assembly, subassembly, upholstery area operations, including any cleanup solvents, shall not exceed 55.9 tons per twelve (12) consecutive month period.
- (c) Proper equipment cleanup and maintenance shall be performed, including containment of any solvent used during equipment cleanup. Such containers shall be closed as soon as cleanup is complete, and any waste solvent shall be disposed of in such a manner that minimizes evaporation.

D.3.2 PSD Minor Limit [326 IAC 2-2] [40 CFR 52.21]

- (a) Pursuant to PC (01) 1658, issued on October 20, 1987, the entire source shall be limited to less than 250 tons of VOC emissions per twelve consecutive month period. This limitation includes equipment listed in sections D.1, D.2 and D.3. Any change or modification which may increase VOC usage to 250 tons per 12 consecutive month period, or greater, shall require OAM approval before such change can take place.
- (d) Compliance with this limit makes 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable.

D.3.3 Preventive Maintenance Plan [326 IAC 2-7-4(c)(9)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for this facility and any control devices.

Compliance Determination Requirements

D.3.4 Testing Requirements [326 IAC 2-7-6(1),(6)]

The Permittee is not required to test this facility by this permit. However, IDEM may require compliance testing at any specific time when necessary to determine if the facility is in compliance. If testing is required by IDEM, compliance with the VOC limits specified in D.3.1 and D.3.2 shall be determined by a performance test conducted in accordance with Section C - Performance Testing.

D.3.5 Volatile Organic Compounds (VOC)

Compliance with the VOC content and usage limitations contained in Conditions D.3.1 shall be determined pursuant to 326 IAC 8-1-4(a)(3) and 326 IAC 8-1-2(a) using formulation data supplied by the coating manufacturer. IDEM, OAM, reserves the authority to determine compliance using Method 24 in conjunction with the analytical procedures specified in 326 IAC 8-1-4.

D.3.6 VOC Emissions

Compliance with Conditions D.3.1 and D.3.2 shall be demonstrated within 30 days of at the end of each month based on the total volatile organic compound usage for the most recent twelve (12) month period.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.3.7 Record Keeping Requirements

- (a) To document compliance with Conditions D.3.1 and D.3.2, the Permittee shall maintain records in accordance with (1) through (5) below. Records maintained for (1) through (5) shall be taken monthly and shall be complete and sufficient to establish compliance with the VOC usage limits and/or the VOC emission limits established in Condition D.3.2.
- (1) The amount, and the VOC content of each coating material and solvent used. Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used. Solvent usage records shall differentiate between those added to coatings and those used as cleanup solvents;
 - (2) A log of the month(s) of use;
 - (3) The cleanup solvent usage for each month;
 - (4) The total VOC usage for each month; and
 - (5) The weight of VOCs emitted for each compliance period.
- (b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.3.8 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.3.2 shall be submitted to the addresses listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR MANAGEMENT
COMPLIANCE DATA SECTION**

Part 70 Quarterly Report

Source Name: Thunderbird Products, Inc.
Source Address: 2200 Monroe Street, Decatur, Indiana 46733
Mailing Address: 2200 Monroe Street, Decatur, Indiana 46733
Part 70 Permit No.: T001-5903-00031
Facility: entire source including the following booths: GSB4, GSB5, GSB6, AV2, AV3, AV4, AV4, AV5, AV6, AV7, STB1, STB2, STB3, STB4, STB5, STB8, STB9, STB10, STB11, SB1, SB2, SB3, SB4, SB5, SB6, SB7, SB8, and assembly, subassembly, upholstery area.
Parameter: VOC
Limit: less than 250 tons per twelve (12) consecutive month period

YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total
Month 1			
Month 2			
Month 3			

- 9 No deviation occurred in this quarter.
9 Deviation/s occurred in this quarter.
Deviation has been reported on: _____

Submitted by: _____
Title / Position: _____
Signature: _____
Date: _____
Phone: _____

A certification is not required for this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR MANAGEMENT
COMPLIANCE DATA SECTION**

Part 70 Quarterly Report

Source Name: Thunderbird Products, Inc.

Source Address: 2200 Monroe Street, Decatur, IN 46733

Mailing Address: 2200 Monroe Street, Decatur, IN 46733

Part 70 Permit No.: T0015903-00031

Facility: STB7, STB8, STB9, STB10 and STB11

Parameter: Single and Combined Hazardous Air Pollutants (HAPs)

The hazardous air pollutant (HAP) input usage shall be limited such that total combined HAP emissions are limited to less than 100 tons per twelve (12) consecutive month period based on the following:

- (a) When applying gel coats and resins, VOC emissions shall be calculated by multiplying the material usage by the appropriate emission factor based on the monomer content, method of application, and other emission reduction techniques, and summing the emissions for all gel coats and resins.
- (b) Until such time that new emissions information is made available by U.S. EPA in its AP-42 document or other U.S. EPA- approved form, emission factors for the gel coat and resin applications shall be taken from the following reference approved by IDEM, OAM: "CFA Emission Models for the Reinforced Plastics Industries," Composites Fabricators Association, February 28, 1998 (updated as the "Unified Emission Factors for Open Molding of Composites" ("CFA Factors", April 1999). For the purposes of these emission calculations, monomer in resins and gel coats that is not styrene shall be considered as styrene on an equivalent weight basis.
- (c) When applying VOC solvents other than gel coats and resins, VOC emissions shall be calculated using an emission factor of 2,000 pounds of VOC emitted per ton of VOC used.

YEAR: _____

Month	Combined HAPs Emitted This Month (tons)		Combined HAPs Emitted Previous 11 Months (tons)		Combined HAPs Emitted 12 Month Total (tons)	
Month 1						
Month 2						
Month 3						

9No deviation occurred in this quarter.

9Deviation(s) occurred in this quarter.

Deviation has been reported on: _____

Submitted by: _____

Title/Position: _____

Signature: _____

Date: _____

Phone: _____

A certification is not required for this report.

Indiana Department of Environmental Management Office of Air Management

Technical Support Document (TSD) for a Significant Source Modification to a Part 70 Operating Permit

Source Background and Description

Source Name:	Thunderbird Products, Inc.
Source Location:	2200 Monroe Street, Decatur, IN 46733
County:	Adams
SIC Code:	3732
Operation Permit No.:	T001-5903-00031
Operation Permit Issuance Date:	October 14, 1999
Source Modification No.:	SSM 001-11987-00031
Permit Reviewer:	LQ/EVP

The Office of Air Management (OAM) has reviewed a modification application from Thunderbird Products, Inc. relating to the construction of the following equipment, pursuant to 326 IAC 2-7-10.5, at this fiberglass pleasure boat manufacturing source:

- (a) Five (5) gel coating/resin stationary booths, identified as STB7, STB8, STB9, STB10, and STB11, each with a maximum capacity of 0.025 boat units per hour, each using dry filters as particulate matter overspray control, and each exhausting to stacks/vents 029, 030, 031, 032 and 036, respectively;
- (b) Three (3) paint spray booths, identified as SB6, SB7 and SB8, each with a maximum capacity of 0.025 boat units per hour, each using dry filters as particulate matter overspray control, and each exhausting to stacks/vents 033, 034, and 035, respectively;
- (c) One (1) assembly, subassembly, upholstery area, processing a maximum of 0.25 boat units per hour, and exhausting to the atmosphere.

Note: the assembly area was previously considered an insignificant activity in Part 70 permit T001-5903-00031.

The source also consists of the following insignificant activities associated with the modification:

- (a) Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) Btu per hour;
- (b) Paved and unpaved roads and parking lots with public access;
- (c) Boat cavity foam filling operations.

History

On March 8, 2000, Thunderbird Products, Inc. submitted an application to the OAM requesting to add additional stationary booths, paint booths, and a product assembly area to its plant. Thunderbird Products, Inc. was issued a Part 70 permit on October 14, 1999.

Existing Approvals

The source was issued a Part 70 Operating Permit T001-5903-00031 on October 14, 1999.

Enforcement Issue

There are no enforcement actions pending.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)
029	gel coat/resin booth (STB7)	45'6"	36"	30,000	ambient
030	gel coat/resin booth (STB8)	45'6"	36"	30,000	ambient
031	gel coat/resin booth (STB9)	45'6"	36"	30,000	ambient
032	gel coat/resin booth (STB10)	45'6"	36"	30,000	ambient
036	gel coat/resin booth (STB11)	45'6"	36"	30,000	ambient
033	paint spray booth (SB6)	33'	3.5'	40,500	ambient
034	paint spray booth (SB7)	33'	3.5'	35,200	ambient
035	paint spray booth (SB8)	33'	3.5'	35,200	ambient

Recommendation

The staff recommends to the Commissioner that the Significant Source Modification, be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on March 8, 2000. Additional information was received on June 20, 2000.

Emission Calculations

See Appendix A of this document for detailed emissions calculations (pages 1 - 5).

Potential To Emit Before Controls (Modification)

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA."

This table reflects the Potential to Emit before controls for the modification. Control Equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Pollutant	Potential To Emit (tons/year)
PM-10	greater than 100, less than 250
PM	greater than 100, less than 250
SO ₂	less than 100
VOC	greater than 100, less than 250
CO	less than 100
NO _x	less than 100

HAP's	Potential To Emit (tons/year)
Toluene	less than 10
Xylene	less than 10
Styrene	greater than 10
Glycol Ethers	less than 10
Methyl Methacrylate	less than 10
Methanol	less than 10
TOTAL	greater than 25

- (a) The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of particulate matter (PM), particulate matter with an aerodynamic diameter at or below 10 microns (PM-10), and volatile organic compounds (VOC) are equal to or greater than 25 tons per year. The source is subject to the provisions of 326 IAC 2-7, and a Part 70 permit was issued on October 14, 1999. Therefore, the source is subject to the provisions of 326 IAC 2-7-10.5 for this significant source modification.
- (b) The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of any single hazardous air pollutant (HAP) is equal to or greater than ten (10) tons per year and the potential to emit (as defined in 326 IAC 2-7-1(29)) of a combination HAPs is greater than or equal to twenty-five (25) tons per year. The source is subject to the provisions of 326 IAC 2-7, and a Part 70 permit application was issued on October 14, 1999. Therefore, the source is subject to the provisions of 326 IAC 2-7-10.5 for this significant source modification.
- (c) Fugitive Emissions
Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD and Emission Offset applicability.

County Attainment Status

The source is located in Adams County.

Pollutant	Status
PM-10	attainment
SO ₂	attainment
NO ₂	attainment
Ozone	attainment
CO	attainment
Lead	attainment

- (a) Volatile organic compounds (VOC) and oxides of nitrogen (NO_x) are precursors for the formation of ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to the ozone standards. Adams County has been designated as attainment or unclassifiable for ozone.

Source Status

Existing Source PSD or Emission Offset Definition (emissions after controls, based upon 8760 hours of operation per year at rated capacity and/or as otherwise limited):

Pollutant	Emissions (tons/year)
PM	28.91
PM-10	28.91
SO ₂	--
VOC	249.96
CO	--
NO _x	--

- (a) This existing source is not a major stationary source because no attainment regulated pollutant is emitted at a rate of 250 tons per year or more, and it is not one of the 28 listed source categories.
- (b) These emissions are based upon emission data from Part 70 Permit, T001-5903-00031.

Potential to Emit After Controls for the Modification

The table below summarizes the potential to emit, reflecting all limits, of the modification after controls. The control equipment for the modification is considered federally enforceable only after issuance of the Part 70 permit modification.

Pollutant	PM (ton/yr)	PM10 (ton/yr)	SO ₂ (ton/yr)	VOC (ton/yr)	CO (ton/yr)	NO _x (ton/yr)	Single HAP	Total HAPs
Proposed Modification	65.44	65.44	--	131.42	--	--	--	--
Existing Title V Limits (T001-5903-000311, issued on October 14, 1999)	28.91	28.91	--	249.96*	--	--	--	--
Revised Title V Limits (includes existing equipment and proposed equipment)	94.35	94.35	--	249.96*	--	--	--	--
PSD Significant Levels	250	250	250	250	250	250	N/A	N/A
Note: This source will be able to keep its PSD Minor status.								

*Note: Taken from Part 70 permit T001-5903-00031, issued October 14, 1999.

This modification to an existing minor stationary source is not major because the emission increase is less than the PSD significant levels. Therefore, pursuant to 326 IAC 2-2 and 40 CFR 52.21, the PSD requirements do not apply.

Federal Rule Applicability

- (a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this source modification.
- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 40 CFR Part 61) applicable to this source modification.
- (c) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 20 and 40 CFR Part 63) currently applicable to this source. However, pursuant to the Clean Air Act of 1990, the United States Environmental Protection Agency (U.S. EPA) has established the Boat Manufacturing source category as requiring hazardous air pollutant (HAP) control. It is anticipated that the U.S. EPA will propose HAP emissions control which covers resin/gel coat operations at fiberglass boat manufacturers; paint and coating operations at aluminum boat manufacturers; and carpet/fabric adhesive operations at all boat manufacturers. The rule will apply to all major boat manufacturing HAP sources (i.e., emits or has the potential to emit 10 tons per year and 25 tons per year of single and combined HAPs, respectively). Since the source is a major source of HAP emissions, it will evaluate applicability to the standards, limits, and testing, monitoring, record keeping and reporting requirements of the final rule upon its promulgation and will comply as required.
- (d) The National Emissions Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 20 and 40 CFR 63) for the Shipbuilding and Ship Repair source category (i.e., 40 CFR 63.780 - 63.788, Subpart II) does not apply to this source since the rule does not include pleasure craft manufacturing (i.e., this source) as an affected source.

State Rule Applicability - Entire Source

326 IAC 2-2 (Prevention of Significant Deterioration)

Pursuant to 326 IAC 2-2 and 40 CFR 52.21 (Prevention of Significant Deterioration, PSD), this proposed modification is not considered a major modification because it has the potential to emit less than applicable PSD significant emission levels for any regulated pollutant. Thunderbird Products requests that the equipment listed in this source modification be included with their existing minor PSD limit. Therefore, the entire source (i.e., emission units previously permitted under T001-5903-00031 and emission units for this source modification) will be limited to less than 250 tons of VOC emissions per twelve (12) consecutive month period. Therefore, the PSD rules, 326 IAC 2-2 and 40 CFR 52.21, will not apply.

326 IAC 2-6 (Emission Reporting)

This source is subject to 326 IAC 2-6 (Emission Reporting), because it has the potential to emit greater than one hundred (100) tons per year of VOCs. Pursuant to this rule, the owner/operator of the source must annually submit an emission statement for the source. The annual statement must be received by July 1 of each year and contain the minimum requirement as specified in 326 IAC 2-6-4. The submittal should cover the period defined in 326 IAC 2-6-2(8)(Emission Statement Operating Year).

326 IAC 5-1 (Opacity Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

State Rule Applicability - Individual Facilities

326 IAC 2-4.1-1 (New Source Toxics Control)

Pursuant to 326 IAC 2-4.1-1 (New Source Toxics Control), any new process or production unit, which in and of itself emits or has the potential to emit (PTE) 10 tons per year of any HAP or 25 tons per year of any combination of HAPs, must be controlled using technologies consistent with Maximum Achievable Control Technology (MACT). The gel coating/resin application in stationary booths STB7, STB8, STB9, STB10 and STB11 will have an uncontrolled PTE greater than 10 tons per year of any single HAP and greater than 25 tons per year of the combination of HAPs.

Pursuant to the MACT determination under 326 IAC 2-4.1-1, operating conditions for the five (5) new gel coating/resin stationary booths, identified as STB7, STB8, STB9, STB10 and STB11 shall be the following:

- (a) Use of resins, gel coats and clean-up solvents, as well as VOC delivered to the applicators shall be limited such that the potential to emit (PTE) volatile organic HAP from resin and gel coat applications shall be limited to less than 100 tons per twelve (12) consecutive month period. Compliance with this limit shall be determined based upon the following criteria:
 - (1) Monthly usage by weight, monomer content, method of application, and other emission reduction techniques for each gel coat and resin shall be recorded. VOC emissions shall be calculated by multiplying the usage of each gel coat and resin by the emission factor that is appropriate for the monomer content, method of application, and other emission reduction techniques for each gel coat and resin, and summing the emissions for all gel coats and resins. Emission factors shall be obtained from the reference approved by IDEM, OAM.
 - (2) Until such time that new emissions information is made available by U.S. EPA in its AP-42 document or other U.S. EPA- approved form, emission factors shall be taken from the following reference approved by IDEM, OAM: "CFA Emission Models for the Reinforced Plastics Industries," Composites Fabricators Association, February 28, 1998, or its update, and shall not exceed 32.3% styrene emitted per weight of gel coat applied and 17.7% styrene emitted per weight of resin applied. For the purposes of these emission calculations, monomer in resins and gel coats that is not styrene shall be considered as styrene on an equivalent weight basis.
- (b) Resins and gel coats used, including filled resins and tooling resins and gel coats, shall be limited to maximum monomer contents of 35 percent (35%) by weight for resins and gel coats or their equivalent on an emissions mass basis. Monomer contents shall be calculated on a neat basis, i.e., excluding any filler. Compliance with these monomer content limits shall be demonstrated on a monthly basis.

The use of resins and gel coats with monomer contents lower than 35%, and/or additional emission reduction techniques approved by IDEM, OAM, may be used to offset the use of resins and gel coats with monomer contents higher than 35%. Examples of other techniques include, but are not limited to, lower monomer content resins and gel coats, closed molding, vapor suppression, vacuum bagging, controlled spraying, or installing a control device with an overall reduction efficiency of 95%. This is allowed to meet the monomer content limits for resins and gel coats, and shall be calculated on an equivalent emissions mass basis as shown below:

$$\frac{(\text{Emissions from } >35\% \text{ resin or gel coat}) - (\text{Emissions from } 35\% \text{ resin or gel coat})}{(\text{Emissions from } 35\% \text{ resin or gel coat}) - (\text{Emissions from } <35\% \text{ resin or gel coat, and other emission reduction techniques})} \leq 1$$

Where: Emissions, lb or ton = M (mass of resin or gel coat used, lb or ton) * EF
(Monomer emission factor for resin or gel cat used, %):

EF, Monomer emission factor = emission factor, expressed as % styrene emitted per weight of resin applied, which is indicated by the monomer content, method of application, and other emission reduction techniques for each gel coat and resin used.

- (c) Flow coatlers, a type of non-spray application technology of a design and specifications to be approved by IDEM, OAM, shall be used to apply neat resins.

If, after 1 year of operation it is not possible to apply a portion of neat resins with flow coatlers, equivalent emissions reductions must be obtained via use of other techniques, such as those listed in (b) above, elsewhere in the process.

- (d) Optimized spray techniques according to a manner approved by IDEM shall be used for gel coats and filled resins (where fillers are required for corrosion or fire retardant purposes) at all times. Optimized spray techniques include, but are not limited to, the use of airless, air-assisted airless, high volume low pressure (HVLP), or other spray applicators demonstrated to the satisfaction of IDEM, OAM, to be equivalent to the spray applicators listed above.

HVLP spray is the technology used to apply material to substrate by means of coating application equipment that operates between one-tenth (0.1) and ten (10) pounds per square inch gauge (psig) air pressure measured dynamically at the center of the air cap and at the air horns of the spray system.

- (e) The listed work practices shall be followed:

- (1) To the extent possible, a non-VOC, non-HAP solvent shall be used for cleanup.
- (2) Cleanup solvent containers used to transport solvent from drums to work stations shall be closed containers having soft gasketed spring-loaded closures.
- (3) Cleanup rags saturated with solvent shall be stored, transported, and disposed of in containers that are closed tightly.
- (4) The spray guns used shall be the type that can be cleaned without the need for spraying the solvent into the air.
- (5) All solvent sprayed during cleanup or resin changes shall be directed into containers, such containers shall be closed as soon as solvent spraying is complete and the waste solvent shall be disposed of in such a manner that evaporation is minimized.

- (6) Storage containers used to store VOC- and/or HAP- containing materials shall be kept covered when not in use.

Compliance with these MACT conditions will also satisfy the requirements of 326 IAC 8-1-6 (BACT) for the gel coating/resin application in stationary booths STB7, STB8, STB9, STB10 and STB11.

326 IAC 8-1-6 (New Facilities, General Reduction Requirements)

Facilities constructed after January 1, 1980, with potential VOC emissions of 25 tons per year or more are subject to 326 IAC 8-1-6.

- (a) Potential VOC emissions from the three (3) paint spray booths (SB6, SB7 and SB8) are less than 25 tons per year, therefore, 326 IAC 8-1-6 will not apply to this facility.
- (b) The five (5) gel coating/resin application operations (STB7, STB8, STB9, STB10, and STB11), as a single operation and facility, are subject to the provisions of 326 IAC 8-1-6 since they were constructed after January 1, 1980, and have potential VOC emissions greater than 25 tons per year. The stationary booths (STB7, STB8, STB9, STB10, and STB11) will meet the requirements of the MACT conditions and therefore will satisfy 326 IAC 8-1-6 (BACT) requirement.
- (c) The assembly, subassembly, and upholstery adhesive application area, as one facility, is subject to the provisions of 326 IAC 8-1-6 since it was constructed after January 1, 1980, and has potential VOC emissions greater than 25 tons per year. Pursuant to the rule requirements, Thunderbird Products has submitted a BACT analysis, dated June 6, 2000, as part of this permit application. The options considered in the BACT analysis for the application of adhesives in the assembly, subassembly, upholstery area are:
- (1) Thermal Incinerator;
 - (2) Thermal Incinerator with fluidized bed concentrator;
 - (3) Lower VOC Adhesives (Water-based and hot melt adhesives);
 - (4) Catalytic Incinerator;
 - (5) Flare;
 - (6) Adsorption;
 - (7) Vapor Recovery System;
 - (8) Biodigestion;
 - (9) No add-on controls; low VOC adhesives.

Options (3) through (8) have been determined to be technically infeasible for the following reasons:

- (3) Lower VOC Adhesives (Water-based and hot melt adhesives):
Thunderbird Products presently uses the lowest VOC emitting adhesives acceptable for watercraft manufacturing. They have performed an extensive adhesives testing study to try to identify even lower VOC emitting adhesives that are technically feasible for this purpose. A summary of problems that water-base and hot melt adhesives pose to the manufacturing of watercraft follows:
- (a) No repositioning capabilities
 - (b) Nonporous surfaces - water cannot evaporate resulting in adhesive failure
 - (c) Overspray - due to the requirement of atomization, overspray covers anything near the application site
 - (d) Nasal and throat irritation caused by the overspray
 - (e) Bleed through with thinner fabrics
 - (f) Poor heat resistance
 - (g) Bonding failure

- (h) Fabric dimpling
- (i) Inadequate bond strength
- (j) Unacceptable initial tack
- (k) Long cure times

Based on the adhesive testing, Thunderbird concluded that available lower VOC emitting adhesives are not technically feasible for watercraft manufacturing.

(4) Catalytic Incinerator:

A catalytic oxidizer passes the contaminated exhaust air through special catalytic cells, honeycombs, or coated beds that hasten the oxidation of organic pollutant vapors at much lower temperatures than for straight thermal oxidation. The catalyst materials consist of precious metals, such as platinum-coated or palladium-coated ceramic beads, or base metal catalysts, such as magnesium oxide particles. The problems with catalytic oxidation are as follows:

- (a) Catalyst Deactivation - the steady deterioration in destruction efficiency caused by the deactivation of the reactive sites on the surface of the catalyst.
- (b) Catalyst Poisoning - caused by various airborne contaminants, such as heavy metals, silicates, and sulfur, which will poison the catalyst.
- (c) Catalyst Plugging - small openings in the catalyst bed that can become plugged with foreign matter entering the exhaust stream.

For these reasons catalytic incineration is not technically feasible.

(5) Flare:

A flare is a traditional control technology that uses an open flame to dispose of waste gases during normal operations and emergencies. Gases that have heating values less than 300 Btu/ft³ are not assured of achieving high destruction of 98% or more. At most composites plants, the heating value of the highest concentration exhaust streams over 100 ppmv are still less than 1.0 Btu/ft³, which is over 300 times less than the acceptable threshold for flares. Therefore, flare technology is not suitable for controlling exhaust streams from composites facilities.

(6) Adsorption:

A gas adsorption system utilizes a mass transfer process involving interactions between gaseous and solid phase components. The gas phase is captured on the solid phase by physical or chemical adsorption mechanisms. Most VOC adsorption systems use activated carbon as the solid phase, although a few systems use silica gels, diatomaceous earth, alumina, synthetic zeolites, special polymer materials, or other proprietary substances. There are several problems that may affect the efficiency of an adsorber unit:

- (a) Heel - refers to the portion of the sorbent that is permanently deactivated after the first adsorb-desorb cycle of the virgin sorbent material. Many sorbent materials have some pore spaces that can trap some organic molecules with very high bonding energies. The percentage of the initial pore space that is permanently filled is the "heel".
- (b) Deactivation - since the assembly/subassembly, upholstery area is a large open area, contaminants, (i.e., such as styrene), can enter from other areas of the plant (i.e., gel coat/resin booths). The styrene

monomer may polymerize on the sorbent forming an impervious polystyrene film on the surface of each granule that permanently prevents future adsorption or desorption.

- (c) Breakthrough - is the failure of the sorbent to capture all of the sorbate as it passes through the sorbent bed. Breakthrough is usually declared when the concentration of sorbate in the exiting flow reaches 5% of the concentration in the entering flow.
- (d) Plugging - occurs when the sorbent bed becomes loaded with dust, dirt, or resin aerosol deposits. These deposits physically block the air passageways through the sorbent media.
- (e) Tunneling - occurs when relatively small air channels pass through the sorbent bed. These channels allow some of the exhaust air to quickly pass through the bed without adequate close contact with the sorbent, so that all of the organic compounds in the air are not adsorbed.

These problems might not happen abruptly, but could occur slowly throughout the life of the system and are difficult to predict. They are also difficult to directly measure, because of the small change and complexity of the measurement. For these reasons, the performance of an adsorption system may need to be monitored continuously to verify the control efficiency of the sorbent bed. At present, the only feasible continuous measure of adsorber performance appears to be a direct simultaneous measurement of the inlet and outlet organic concentrations through the adsorber unit which have regulatory implications.

(7) Vapor Recovery System (Condensation):

The condensation process separates volatile organic vapor components from the exhaust air by forcing the volatile components to undergo a phase change from a gas to liquid. This phase change is accomplished by either an increase in gas pressure, a reduction in gas temperature, or both. Refrigeration equipment is typically used to lower the temperature of the exhaust stream to below the dew point (saturation temperature) of the organic vapors in the exhaust stream. The organic vapor condenses to a liquid, and the condensate is collected and either reused or destroyed.

Condensation can effectively remove organic vapors from a small exhaust flow that has a high organic concentration and negligible moisture content. Condensation is usually successful for organic concentrations above 5,000 parts per million volumetric (ppmv) and flow rates below 2,000 scfm. For this application, the capture system flow rate would need to be 160,000 scfm with low VOC concentrations of 5 ppmv. For this reason, condensation is not technically feasible.

(8) Biodigestion:

Biodigestion employs living microbes, such as bacteria and slimes, that first digest and then ultimately metabolize organic vapors into CO₂ and H₂O. Biodigestion works best for exhaust streams with low organic concentrations, or organic compounds with low toxicity to prevent poisoning of the microbes. Ambient exhaust temperatures ranging from 10 to 43 °C are needed to prevent chilling or overheating the microbes, and water soluble organic compounds that are readily accessible to the microbes. The main problems with biofiltration are:

- (a) it is not commercially demonstrated for the composites industry;

- (b) the performance of the system can suddenly drop without a clear reason;
- (c) organic media pore spaces may plug up with microbial growths;
- (d) the biomass may require a weekly nutrient solution bath and a periodic application of a pH control solution.

At this time there are no biodigestion systems commercially available that could be used in this application. For this reason, it is not technically feasible.

The two control options that were determined to be technically feasible are thermal incineration and thermal incineration with concentrator. A cost analysis for the add-on VOC control options was performed to determine the economic feasibility of these options. The cost analysis is based on potential VOC emissions of 55.88 tons per year for the adhesive operation:

Tables (a) through (c) below show the results of the cost analysis.

(a)

Capital Cost

Option	Base Price	Direct Cost	Indirect Cost	Total
Thermal Incinerator	\$2,734,087.00	\$820,225.00	\$847,568.00	\$4,401,880.00
Thermal Incinerator with concentrator	\$3,669,800.00	\$212,000.00	- -	\$3,881,800.00

(b)

Annual Operating, Maintenance & Recovery Cost

Option	Direct Cost	Indirect Cost	Capital Recovery Cost	Total
Thermal Incinerator	\$2,404,581.00	\$189,103.00	\$626,828.00	\$3,220,512.00
Thermal Incinerator with concentrator	\$319,452.00	\$168,299.00	\$552,768.00	\$1,040,519.00

(c)

Evaluation for Adhesive Application Operation (Assembly, Subassembly, Upholstery Area)

Option	Potential Emissions (tons/yr)	Emissions Removed (tons/yr)	Control Efficiency (%)	\$/ton Removed
Thermal Incinerator	55.88	53.09	95.0	\$60,661.37
Thermal Incinerator with concentrator	55.88	53.09	95.0	\$19,599.15

Methodology:

Emissions removed = (limited potential emissions from assembly area) * (control efficiency)

\$/ton removed = total annual cost / emissions removed

The cost breakdown is as follows:

(a) Capital Cost

- (1) Base price: purchase price, auxiliary equipment, instruments, controls, taxes and freight.

- (2) Direct installation cost: foundations/supports, erection/handling, electrical, piping, insulation, painting, site preparation and building/facility.
 - (3) Indirect installation cost: engineering, supervision, construction/filed expenses, construction fee, start up, performance test, model study and contingencies.
- (b) Annual Cost
- (1) Direct operating cost: operating labor (operator, supervisor), labor and material maintenance, operating materials, utilities (electricity, gas).
 - (2) Indirect operating cost: overhead, property tax, insurance, administration and capital recovery cost (for 10 years life of the system at 10% interest rate).

The add-on control options evaluated above have been determined to be economically infeasible. BACT has been determined to be no add-on VOC emissions control with the following work practices:

- (1) The VOC content of the adhesives and sealants applied shall not exceed 9.5 pounds per gallon less water;
- (2) The total VOC input to the assembly, subassembly, upholstery area operations, including any cleanup solvents, shall not exceed 55.9 tons per twelve (12) consecutive month period.
- (3) Proper equipment cleanup and maintenance shall be performed, including containment of any solvent used during equipment cleanup. Such containers shall be closed as soon as cleanup is complete, and any waste solvent shall be disposed of in such a manner that minimizes evaporation.

326 IAC 8-7 (Specific VOC Reduction Requirements for Lake, Porter, Clark and Floyd Counties)

The requirements of this rule apply to stationary sources located in Lake, Porter, Clark and Floyd Counties that emit or have the potential to emit VOCs at levels equal to or greater than 25 tons per year in Lake and Porter Counties; 100 tons per year in Clark and Floyd Counties; and to any coating facility that emits or has the potential to emit 10 tons per year or greater in Lake, Porter, Clark or Floyd County. This rule is not applicable to this source since it is located in Adams County.

326 IAC 8-12 (Shipbuilding or Ship Repair Operations in Clark, Floyd, Lake, and Porter Counties)

The requirements of this rule apply to shipbuilding or ship repair facilities that are located in Lake, Porter, Clark or Floyd Counties and that emit or have the potential to emit VOC's greater than 100 tons per year in Clark and Floyd Counties; 25 tons per year in Lake or Porter Counties. This rule is not applicable to this source since it is located in Adams County and also because this source does not meet the definition of a Shipbuilding or Ship Repair Operation.

326 IAC 6-3-2 (Process Operations)

The particulate matter (PM) from the paint spray booths and stationary booths shall be limited by the following:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67}$$

where E = rate of emission in pounds per hour and
P = process weight rate in tons per hour

The dry filters shall be in operation at all times the paint spray booths and stationary booths are in operation, in order to comply with this limit.

Compliance Requirements

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs IDEM, OAM, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

Compliance Determination Requirements in Section D of the permit are those conditions that are found more or less directly within state and federal rules and the violation of which serves as grounds for enforcement action. If these conditions are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

The compliance monitoring requirements applicable to this source are as follows:

1. The paint spray booths, SB6, SB7, and SB8, each using dry filters for PM control, and each exhausting to stacks/vents 033, 034, and 035, respectively; and the gel coat/resin stationary booths, STB7, STB8, STB9, STB10 and STB11, each using dry filters for PM control, and each exhausting to stacks/vents 029, 030, 031, 032 and 036, respectively; have applicable compliance monitoring conditions as specified below:
 - (a) Daily inspections shall be performed to verify the placement, integrity and particle loading of the filters. To monitor the performance of the dry filters, weekly observations shall be made of the overspray from the surface coating booth stacks 029, 030, 031, 032, 033, 034, 035 and 036 while one or more of the booths are in operation. The Compliance Response Plan shall be followed whenever a condition exists which should result in a response step. Failure to take response steps in accordance with Section C - Compliance Monitoring Plan - Failure to Take Response Steps, shall be considered a violation of this permit.
 - (b) Monthly inspections shall be performed of the coating emissions from the stack and the presence of overspray on the rooftops and the nearby ground. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when a noticeable change in overspray emission, or evidence of overspray emission is observed. The Compliance Response Plan shall be followed whenever a condition exists which should result in a response step. Failure to take response steps shall be considered a violation of this permit.
 - (c) Additional inspections and preventive measures shall be performed as prescribed in the Preventive Maintenance Plan.

These monitoring conditions are necessary because the dry filters for the surface coating processes must operate properly to ensure compliance with 326 IAC 6-3 (Process Operations) and 326 IAC 2-7 (Part 70).

Air Toxic Emissions

Indiana presently requests applicants to provide information on emissions of the 188 hazardous air pollutants (HAPs) set out in the Clean Air Act Amendments of 1990. These pollutants are either carcinogenic or otherwise considered toxic and are commonly used by industries. They are listed as air toxics on the Office of Air Management (OAM) Part 70 Application Form GSD-08.

- (a) This source will emit levels of air toxics greater than those which constitute a major source according to Section 112 of the 1990 Clean Air Act Amendments.
- (b) See attached calculations for detailed air toxic calculations (Appendix A, page 5 of 5).

Conclusion

The operation of this boat building and repair facility shall be subject to the conditions of the attached proposed Significant Source Modification No. 001-11987-00031 to Part 70 Permit No. T001-5903-00031.

Operation of equipment attributable to the modification may not commence until Administrative Amendment No. 001-11985-00031, which incorporates the new equipment into Part 70 Permit No. T001-5903-00031, is issued.

**Indiana Department of Environmental Management
Office of Air Management**

Addendum to the
Technical Support Document for Significant Source Modification to a
Part 70 Operating Permit

Source Name:	Thunderbird Products, Inc.
Source Location:	2200 Monroe Street, Decatur, IN 46733
SIC Code:	3732
County:	Adams
Operation Permit No.:	T001-5903-00031
Operation Permit Issuance Date:	October 14, 1999
Source Modification No.:	SSM 001-11987-00031
Permit Reviewer:	Linda Quigley/EVP

On August 4, 2000, the Office of Air Management (OAM) had a notice published in the Decatur Daily Democrat, Decatur, Indiana stating that Thunderbird Products, Inc. had applied for a Significant Source Modification to a Part 70 Operating Permit for the construction of five (5) gel coating/resin stationary booths, three (3) paint spray booths, and one (1) assembly area. The notice also stated that OAM proposed to issue a Significant Source Modification (SSM) for this operation and provided information on how the public could review the proposed SSM and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this SSM should be issued as proposed.

On August 25, 2000, Cornerstone Environmental Health and Safety, Inc. submitted comments on behalf of Thunderbird Products, Inc. The summary of the comments and corresponding responses is as follows (bolded language has been added, the language with a line through it has been deleted):

Comment # 1

Thunderbird Products, Inc. has decided to install four (4) vents in the assembly area for exhaust and would like to incorporate this change into the Significant Source Modification.

Response # 1

The following changes will be incorporated into the Significant Source Modification:

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)]
[326 IAC 2-7-5(15)]

This stationary source consists of the following emission units and pollution control devices:

- (a) Three (3) gel coating booths, identified as GSB4, GSB5, and GSB6, with a maximum capacity of 0.13 boats per hour per booth, using dry filters as control, and exhausting to stacks/vents #10, #11, and #12.
- (b) Four (4) stationary resin and foam filling booths, identified as, STB1, STB2, STB3, and STB4, with a maximum capacity of 0.005 boats per hour per booth, using dry filters as control, and exhausting to stacks/vents #13, #14, #15, and #16.

- (c) Five (5) IMRON paint spray booths, identified as, SB1, SB2, SB3, SB4, and SB5, with a maximum capacity of 0.078 boats per hour per booth, using dry filters as control, and exhausting to stacks/vents, #18, #19, #20, #21, and #22.
- (d) Six (6) lamination and foam filling areas, identified as: AV2, AV3, AV4, AV5, AV6, and AV7, with a maximum capacity of 0.13 boats per hour per booth, using dry filters as control, and exhausting to stacks/vents, #3, #4, #5, #6, #7, and #8.
- (e) Five (5) gel coating/resin stationary booths, identified as STB7, STB8, STB9, STB10 and STB11, each with a maximum capacity of 0.025 boat units per hour, each using dry filters as particulate matter overspray control, and each exhausting to stacks/vents #029, #030, #031, #032 and #036, respectively.
- (f) Three (3) paint spray booths, identified as SB6, SB7, and SB8, each with a maximum capacity of 0.025 boat units per hour, each using dry filters as particulate matter overspray control, and each exhausting to stacks/vents #033, #034, and #035, respectively.
- (g) One (1) assembly, subassembly, upholstery area, processing a maximum of 0.25 boat units per hour, and exhausting to the atmosphere **four (4) vents, identified as #037, #038, #039, and #040.**

SECTION D.3 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]

- a) One (1) assembly, subassembly, upholstery area, processing a maximum of 0.25 boat units per hour, and exhausting ~~to the atmosphere~~ **four (4) vents, identified as #037, #038, #039, and #040.**
(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions).

On September 1, 2000, Cornerstone Environmental Health and Safety, Inc. submitted additional comments on behalf of Thunderbird Products, Inc. The summary of the comments and corresponding responses is as follows (bolded language has been added, the language with a line through it has been deleted):

Comment # 1

Section D.1.1 (b) should be modified to include the "Unified Emission Factors for Open Molding of Composites" which allows for specific emission determinations for Methyl Methacrylate.

Response # 1

Section D.1.1 (b) shall read as follows:

- (b) Until such time that new emissions information is made available by U.S. EPA in its AP-42 document or other U.S. EPA- approved form, emission factors shall be taken from the following reference approved by IDEM, OAM: "CFA Emission Models for the Reinforced Plastics Industries," Composites Fabricators Association, February 28, 1998, or its update, and shall not exceed 32.3% styrene emitted per weight of gel coat applied and 17.7% styrene emitted per weight of resin applied. For the purposes of these emission calculations, monomer in resins and gel coats that is not styrene shall be considered as styrene on an equivalent weight basis. **Emission factors for methyl methacrylate may be obtained from the "Unified Emission Factors for Open Molding of Composites" which allows for specific emission determinations for methyl methacrylate.**

Comment # 2

Sections D.1.2 (a) and (b) are redundant from section D.1.1 and further it does not completely describe the limitation for equipment listed in sections D.1, D.2 and D.3. The verbiage should be eliminated.

Response # 2

Section D.1.2 shall read as follows:

D.1.2 PSD Minor Limit [326 IAC 2-2] [40 CFR 52.21]

Pursuant to PC (01) 1658, issued on October 20, 1987, the entire source shall be limited to less than 250 tons of VOC emissions per twelve consecutive month period. This limitation includes equipment listed in sections D.1, D.2 and D.3. Compliance with this condition shall be based on the **conditions of D.1.1 (a) and (b).** ~~following:~~

- ~~b) When applying gel coats and resins, VOC emissions shall be calculated by multiplying the material usage by the appropriate emission factor based on the monomer content, method of application, and other emission reduction techniques, and summing the emissions for all gel coats and resins. Emission factors shall be obtained from the reference approved by IDEM, OAM.~~
- ~~c) Until such time that new emissions information is made available by U.S. EPA in its AP-42 document or other U.S. EPA- approved form, emission factors shall be taken from the following reference approved by IDEM, OAM: "CFA Emission Models for the Reinforced Plastics Industries," Composites Fabricators Association, February 28, 1998, or its update. For the purposes of these emission calculations, monomer in resins and gel coats that is not styrene shall be considered as styrene on an equivalent weight basis.~~

Any change or modification which may increase **source wide VOC usage emissions** to 250 tons per 12 consecutive month period, or greater, shall require OAM approval before such change can take place.

Compliance with this limit makes 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable.

Comment # 3

Section D.1.7 (a) is not applicable to this section of the permit.

Response # 3

Section D.1.7 shall now read as follows:

D.1.7 VOC Emissions

Compliance with Condition D.1.2 shall be demonstrated within 30 days of at the end of each month based on the total volatile organic compound usage for the most recent twelve (12) month period.

- ~~(a) To document compliance with Condition D.1.9, the Permittee shall maintain records of daily visible emission notations of the fiberglass operations' stack exhaust.~~
- ~~(b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.~~

Comment # 4

Sections D.1.10 (b) and (c) should be corrected to reflect the same descriptive terminology of D.1.9, i.e., daily inspections of filters, weekly observations of booth stacks emissions, and monthly inspections of the stacks and evidence of overspray.

Response # 4

D.1.10 shall now read as follows:

D.1.10 Record Keeping Requirements

- (a) To document compliance with Condition D.1.2(a), the Permittee shall maintain records in accordance with (1) through (4) below. Records maintained for (1) through (4) shall be taken monthly and shall be complete and sufficient to establish compliance with the volatile organic compound emission limit established in Condition D.1.2.
 - (1) The usage by weight and monomer content of each resin and gel coat. Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used;
 - (2) A log of the monthly usage;
 - (3) Method of application and other emission reduction techniques for each resin and gel coat used;
 - (4) The calculated total volatile organic compound emissions from resin and gel coat use for each month.

- (b) To document compliance with Conditions D.1.5, the Permittee shall maintain a log of daily overspray observations, daily and weekly inspections, and those additional inspections prescribed by the Preventive Maintenance Plan.
- (c) To document compliance with Condition D.1.9, the Permittee shall maintain records of ~~daily visible emission notations of the fiberglass operations' stack exhaust~~ **daily inspections of the filters, weekly observation of the overspray from the surface coating booth stacks, and monthly inspections of the coating emissions from the stack and the presence of overspray on the rooftops and the nearby ground.**
- (d) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

Comment # 5

Section D.2.1 (2) should be modified to include the "Unified Emission Factors for Open Molding of Composites" which allows for specific emission determinations for Methyl Methacrylate.

Response # 5

Section D.2.1 (2) shall read as follows:

- (2) Until such time that new emissions information is made available by U.S. EPA in its AP-42 document or other U.S. EPA- approved form, emission factors shall be taken from the following reference approved by IDEM, OAM: "CFA Emission Models for the Reinforced Plastics Industries," Composites Fabricators Association, February 28, 1998, or its update, and shall not exceed 32.3% styrene emitted per weight of gel coat applied and 17.7% styrene emitted per weight of resin applied. For the purposes of these emission calculations, monomer in resins and gel coats that is not styrene shall be considered as styrene on an equivalent weight basis. **Emission factors for methyl methacrylate may be obtained from the "Unified Emission Factors for Open Molding of Composites" which allows for specific emission determinations for methyl methacrylate.**

Comment # 6

Sections D.2.2 (a) and (b) are redundant from section D.1.1 and further it does not completely describe the limitation for equipment listed in sections D.1, D.2 and D.3. The verbiage should be eliminated.

Response # 6

Section D.2.2 shall read as follows:

D.2.2 PSD Minor Limit [326 IAC 2-2] [40 CFR 52.21]

Pursuant to PC (01) 1658, issued on October 20, 1987, the entire source shall be limited to less than 250 tons of VOC emissions per twelve consecutive month period. This limitation includes equipment listed in sections D.1, D.2 and D.3. Compliance with this condition shall be based on the **conditions of D.2.1 (a) and (b).** ~~following:~~

- (b) ———— ~~When applying gel coats and resins, VOC emissions shall be calculated by multiplying the material usage by the appropriate emission factor based on the monomer content, method of application, and other emission reduction techniques, and summing the emissions for all gel coats and resins. Emission factors shall be obtained from the reference approved by IDEM, OAM:~~
- (c) ———— ~~Until such time that new emissions information is made available by U.S. EPA in its AP-42 document or other U.S. EPA-approved form, emission factors shall be taken from the following reference approved by IDEM, OAM: “CFA Emission Models for the Reinforced Plastics Industries,” Composites Fabricators Association, February 28, 1998, or its update. For the purposes of these emission calculations, monomer in resins and gel coats that is not styrene shall be considered as styrene on an equivalent weight basis.~~

Any change or modification which may increase **source wide VOC usage emissions** to 250 tons per 12 consecutive month period, or greater, shall require OAM approval before such change can take place.

Compliance with this limit makes 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable.

Comment # 7

It is our opinion that the paint spray booths should be considered separately specific to the 25 ton threshold in D.2.4 since they each function independently of one another.

Response # 7

The three paint spray booths are being constructed together for the same assembly line, therefore they are considered as part of one facility. Therefore, the 25 ton threshold will be applied to all three booths together. No change was made to the permit.

Comment # 8

In Section D.2.8, “volatile organic compound” should be replaced with “hazardous air pollutant”.

Response # 8

Section D.2.8 shall now read as follows:

D.2.8 HAP Emissions

Compliance with Condition D.2.1(a) shall be demonstrated within 30 days of at the end of each month based on the total ~~volatile organic compound usage~~ **hazardous air pollutant emissions** for the most recent twelve (12) month period.

Comment # 9

In section D.2.12, “total VOC” should be struck from the sentence.

Response # 9

The section D.2.12 (a) shall now read as follows:

D.2.12 Record Keeping Requirements

- (a) To document compliance with Condition D.2.1(a), the Permittee shall maintain records in accordance with (1) through (5) below. Records maintained for (1) through (5) shall be taken monthly and shall be complete and sufficient to establish compliance with the hazardous air pollution (HAP) emission limit established in Condition D.2.1.
- (1) The usage by weight and monomer content of each resin, gel coat, and solvent used. Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used;
 - (2) A log of the month of use;
 - (3) Method of application and other emission reduction techniques for each resin and gel coat used;
 - (4) The total VOC, individual HAP and combined HAP usage for each month; and
 - (5) The weight of individual HAP and combined HAPs emitted for each compliance period.

Comment # 10

Sections D.3.2 (a) and (b) are redundant from section D.1.1 and further it does not completely describe the limitation for equipment listed in sections D.1, D.2 and D.3. The verbiage should be eliminated.

Response # 10

Section D.3.2 shall read as follows:

D.3.2 PSD Minor Limit [326 IAC 2-2] [40 CFR 52.21]

Pursuant to PC (01) 1658, issued on October 20, 1987, the entire source shall be limited to less than 250 tons of VOC emissions per twelve consecutive month period. This limitation includes equipment listed in sections D.1, D.2 and D.3. Compliance with this condition shall be based on the **conditions of D.3.1 (a) and (b).** following:

-
- (1) ~~When applying gel coats and resins, VOC emissions shall be calculated by multiplying the material usage by the appropriate emission factor based on the monomer content, method of application, and other emission reduction techniques, and summing the emissions for all gel coats and resins. Emission factors shall be obtained from the reference approved by IDEM, OAM.~~

- ~~(2) Until such time that new emissions information is made available by U.S. EPA in its AP-42 document or other U.S. EPA- approved form, emission factors shall be taken from the following reference approved by IDEM, OAM: "CFA Emission Models for the Reinforced Plastics Industries," Composites Fabricators Association, February 28, 1998, or its update. For the purposes of these emission calculations, monomer in resins and gel coats that is not styrene shall be considered as styrene on an equivalent weight basis.~~

Any change or modification which may increase **source wide VOC usage emissions** to 250 tons per 12 consecutive month period, or greater, shall require OAM approval before such change can take place.

Compliance with this limit makes 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable.

Comment # 11

Section (b) of the limit on the Part 70 Quarterly Report on page 31i should be modified to include the "Unified Emission Factors for Open Molding of Composites" which allows for specific emission determinations for Methyl Methacrylate.

Response # 11

Section (b) of the limit on the Part 70 Quarterly Report on page 31i shall read as follows:

- (b) Until such time that new emissions information is made available by U.S. EPA in its AP-42 document or other U.S. EPA- approved form, emission factors for the gel coat and resin applications shall be taken from the following reference approved by IDEM, OAM: "CFA Emission Models for the Reinforced Plastics Industries," Composites Fabricators Association, February 28, 1998 (updated as the "Unified Emission Factors for Open Molding of Composites" ("CFA Factors", April 1999). For the purposes of these emission calculations, monomer in resins and gel coats that is not styrene shall be considered as styrene on an equivalent weight basis. **Emission factors for methyl methacrylate may be obtained from the "Unified Emission Factors for Open Molding of Composites" which allows for specific emission determinations for methyl methacrylate.**

This change was also made to section (b) of the limit on the Part 70 Quarterly Report on page 31j.

Comment # 12

In the Part 70 Quarterly Report on page 31j, all references to "VOC" should be changed to "single and combined hazardous air pollutants (HAPs)".

Response # 12

The Parameter section of the Part 70 Quarterly Report on page 31j shall read as follows:

- Parameter: Single and Combined Hazardous Air Pollutants (HAPs)
The hazardous air pollutant (HAP) input usage shall be limited such that total combined HAP emissions are limited to less than 100 tons per twelve (12) consecutive month period based on the following:
- (a) When applying gel coats and resins, ~~VOE~~ **hazardous air pollutant (HAPs)** emissions shall be calculated by multiplying the material usage by the appropriate emission factor based on the monomer content, method of application, and other emission reduction techniques, and summing the emissions for all gel coats and resins.
 - (b) Until such time that new emissions information is made available by U.S. EPA in its AP-42 document or other U.S. EPA- approved form, emission factors for the gel coat and resin applications shall be taken from the following reference approved by IDEM, OAM: "CFA Emission Models for the Reinforced Plastics Industries," Composites Fabricators Association, February 28, 1998 (updated as the "Unified Emission Factors for Open Molding of Composites" ("CFA Factors", April 1999). For the purposes of these emission calculations, monomer in resins and gel coats that is not styrene shall be considered as styrene on an equivalent weight basis. **Emission factors for methyl methacrylate may be obtained from the "Unified Emission Factors for Open Molding of Composites" which allows for specific emission determinations for methyl methacrylate.**
 - (c) When applying ~~VOE~~ **hazardous air pollutant (HAPs)** solvents other than gel coats and resins, ~~VOE~~ **hazardous air pollutants (HAPs)** emissions shall be calculated using an emission factor of 2,000 pounds of ~~VOE~~ **hazardous air pollutants (HAPs)** emitted per ton of ~~VOE~~ **hazardous air pollutants (HAPs)** used.

OAM inserted a statement into the Facility Description box to clarify that the information provided there is descriptive information only and does not constitute enforceable conditions.

Facility Description [326 IAC 2-7-5(15)]

- a) Three (3) gel coating booths, identified as GSB4, GSB5, and GSB6, with a maximum capacity of 0.13 boats per hour per booth using dry filters as control, and exhausting to stacks/vents #10, #11, and #12.
- b) Four (4) stationary resin and foam filling booths, identified as STB1, STB2, STB3, and STB4, with a maximum capacity of 0.005 boats per hour per booth, using dry filters as control, and exhausting to stacks/vents #13, #14, #15, and #16.
- c) Five (5) IMRON paint spray booths, identified as SB1, SB2, SB3, SB4, and SB5, with a maximum capacity of 0.078 boats per hour per booth, using dry filters as control, and exhausting to stacks/vents #18, #19, #20, #21, and #22.
- d) Six (6) lamination and foam filling areas, identified as: AV2, AV3, AV4, AV5, AV6, and AV7, with a maximum capacity of 0.13 boats per hour per booth, using dry filters as control, and exhausting to stacks/vents #3, #4, #5, #6, #7, and #8.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

OAM also revised condition D.1.10 to correct a mistake, as follows:

D.1.10

Record Keeping Requirements

(a) To document compliance with Condition D.1.2(a), the Permittee shall maintain records in accordance with (1) through (4) below. Records maintained for (1) through (4) shall be taken monthly and shall be complete and sufficient to establish compliance with the volatile organic compound emission limit established in Condition D.1.2.

(1) The usage by weight and monomer content of each resin and gel coat. Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used;

(2) A log of the monthly usage;

(3) Method of application and other emission reduction techniques for each resin and gel coat used;

(4) The calculated total volatile organic compound emissions from resin and gel coat use for each month.

(b)

To document compliance with Conditions ~~D.1.5~~ **D.1.8**, the Permittee shall maintain a log of daily overspray observations, daily and weekly inspections, and those additional inspections prescribed by the Preventive Maintenance Plan.

(c)

To document compliance with Condition D.1.9, the Permittee shall maintain records of daily inspections of the filters, weekly observation of the overspray from the surface coating booth stacks, and monthly inspections of the coating emissions from the stack and the presence of overspray on the rooftops and the nearby ground..

(d)

All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit..

Appendix A: Emission Calculations

Company Name: Thunderbird Products, Inc.
Address City IN Zip: 2200 Monroe Street, Decatur, IN 46733
CP: SSM001-11987-00031
Plt ID: 00031
Reviewer: LQ/EVP
Date: April 20, 2000

Uncontrolled Potential Emissions (tons/year)				
Emissions Generating Activity				
Pollutant	Surface Coating Paint Booths	Adhesive Application	Fiberglass Processes Gel Coating/Resin Applic	TOTAL
PM	0.40	64.88	160.36	225.64
PM10	0.40	64.88	160.36	225.64
SO2	0.00	0.00	0.00	0.00
NOx	0.00	0.00	0.00	0.00
VOC	2.98	55.88	72.56	131.42
CO	0.00	0.00	0.00	0.00
total HAPs	0.11	0.70	70.33	73.31
worst case single HAP	0.03	0.22	33.24	33.24
Total emissions based on rated capacity at 8,760 hours/year.				
Controlled Potential Emissions (tons/year)				
Emissions Generating Activity				
Pollutant	Surface Coating Paint Booths	Adhesive Application	Fiberglass Processes Gel Coating/Resin Applic	TOTAL
PM	0.40	64.88	0.16	65.44
PM10	0.40	64.88	0.16	65.44
SO2	0.00	0.00	0.00	0.00
NOx	0.00	0.00	0.00	0.00
VOC	2.98	55.88	72.56	131.42
CO	0.00	0.00	0.00	0.00
total HAPs	0.11	0.70	22.37	23.18
worst case single HAP	0.03	0.22	10.97	10.97
Total emissions based on rated capacity at 8,760 hours/year, after control.				

**Appendix A: Emissions Calculations
VOC and Particulate
From Surface Coating Operations**

Company Name: Thunderbird Products, Inc.
Address: 220 Monroe Street, Decatur, IN 46733
CP: SSM001-11987-00031
Plt ID: 00031
Reviewer: LQ/EVP
Date: April 20, 2000

Material	Process	Density (Lb/Gal)	Weight % Volatile (H2O & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential (ton/yr)	lb VOC/gal solids	Transfer Efficiency
As Supplied																	
IMRON Tint 531U	SB6, SB7, S	8.4	64.67%	0.0%	64.7%	0.0%	30.50%	0.72000	0.075								
IMRON Additive 1924	SB6, SB7, S	7.9	84.48%	0.0%	84.5%	0.0%	20.52%	0.28000	0.075								
IMRON Reducer 848	SB6, SB7, S																
IMRON Accelerator 8	SB6, SB7, S																
As Applied																	
IMRON Tint 531U	SB6, SB7, S	8.2	70.10%	0.0%	70.1%	0.0%	22.53%	1.00000	0.075	5.76	5.76	0.43	10.37	1.89	0.40	25.58	50%
Cleaning Solvent																	
Clean Solvent 3608S	SB6, SB7, S	6.6	100.00%	0.0%	100.0%	0.0%	0.00%	0.50000	0.075	6.61	6.61	0.25	5.95	1.09	0.00		
State Potential Emissions												0.68	16.32	2.98	0.40		

METHODOLOGY:

Coating "As Applied" computations:

* IMRON Tint 531U diluted with combination of IMRON Additive (61.82%), IMRON Reducer (33.46%), and IMRON Accelerator (4.72%) at 0.28 parts diluant to 0.72 parts tint.

$(0.72 (8.35 \text{ lb/gal}) + 0.28 (7.87 \text{ lb/gal})) / 1 = 8.22 \text{ lb/gal}$ as a weighted density for the mixture

$[(0.72 * 8.35 * 0.0) + (0.28 * 7.87 * 0.0)] / [(0.72 * 8.35) + (0.28 * 7.87)] = 0$ weight % of water as a weighted average for the mixture

$[(0.72 * 8.35 * 647) + (0.28 * 7.87 * 8485)] / [(0.72 * 8.35) + (0.28 * 7.87)] = 70.1$ weight % of volatiles as a weighted average for the mixture

$(0.72 (0.3050) + 0.28 (.2052)) / 1 = 22.53$ volume % of non-volatiles for mixture

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)

Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)

Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr)

Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day)

Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000 lbs)

Particulate Potential Tons per Year = (units/hour) * (gal/unit) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) *(8760 hrs/yr) *(1 ton/2000 lbs)

Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids)

Total = Worst Coating + Sum of all solvents used

**Appendix A: Emissions Calculations
Reinforced Plastics and Composites
Fiberglass Processes**

Company Nan Thunderbird Products, Inc.
Address City 12200 Monroe Street, Decatur, IN 46733
Operation Per SSM001-11987-00031
Plt ID: 00031
Reviewer: LQ/EVP
Date: April 20, 2000

State Potential Emissions (uncontrolled):																	
Material (as applied)	Density (Lb/Gal)	Weight % Styrene Monomer or VOC	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Vol (solids)	Emission Factor % of Resin/ Gel Coat Weight	Gal of Mat. (gal/hr)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential ton/yr	lb VOC /gal solids	Transfer Efficiency	
Manual Resin Application																	
AME 1000 Resin	9.02	33.00%	0.00%	33.00%	0.00%	67.00%	4.15%	0.9840	3.0	2.98	0.37	8.84	1.61	0.00	4.44	100.00%	
AME 5000 Resin	9.02	32.00%	0.00%	32.00%	0.00%	68.00%	4.03%	0.3120	2.9	2.89	0.11	2.72	0.50	0.00	4.24	100.00%	
Mechanical Resin Application																	
AME 1000 Resin	9.02	33.00%	0.00%	33.00%	0.00%	67.00%	3.55%	23.6975	3.0	2.98	7.59	182.12	33.24	0.00	4.44	100.00%	
AME 5000 Resin	9.02	32.00%	0.00%	32.00%	0.00%	68.00%	3.42%	7.4200	2.9	2.89	2.29	54.93	10.03	0.00	4.24	100.00%	
Gel Coats																	
Cream Gel	11.06	30.58%	0.00%	30.58%	0.00%	69.42%	13.61%	0.1865	3.4	3.38	0.28	6.74	1.23	3.14	9.74	50.00%	
Interior White Gel	11.67	29.16%	0.00%	29.16%	0.00%	70.84%	12.98%	0.8911	3.4	3.40	1.35	32.40	5.91	16.13	9.61	50.00%	
Lt Greige Gel	11.00	29.75%	0.00%	29.75%	0.00%	70.25%	13.24%	0.0795	3.3	3.27	0.12	2.78	0.51	1.35	9.32	50.00%	
Shell White Gel	11.08	30.05%	0.00%	30.05%	0.00%	69.95%	13.37%	2.6680	3.3	3.33	3.95	94.86	17.31	45.29	9.52	50.00%	
Gel Coats Methyl Methacrylate		MMA % Content															
Cream Gel	11.06	3.00%	0.00%	3.00%	0.00%	97.00%	2.25%	0.1865	0.3	0.33	0.05	1.11	0.20	4.38	0.68	50.00%	
Interior White Gel	11.67	0.00%	0.00%	0.00%	0.00%	*****	0.00%	0.9695	0.0	0.00	0.00	0.00	0.00	24.78	0.00	50.00%	
Lt Greige Gel	11.00	3.00%	0.00%	3.00%	0.00%	97.00%	2.25%	0.0795	0.3	0.33	0.02	0.47	0.09	1.86	0.68	50.00%	
Shell White Gel	11.08	2.00%	0.00%	2.00%	0.00%	98.00%	1.50%	2.6680	0.2	0.22	0.44	10.64	1.94	63.44	0.45	50.00%	
Total State Potential Emissions:											16.57	397.61	72.56	160.36			
Federal Potential Emissions (controlled):																	
Total Federal Potential Emissions:									Control Efficiency:		Controlled VOC lbs per Hour	Controlled VOC lbs per Day	Controlled VOC tons per Year	Controlled PM tons/yr			
									VOC	PM							
									0.00%	99.90%	16.57	397.61	72.56	0.16			

Note: Resin and Gel coating operations performed in five (5) stationary booths identified as STB7, STB8, STB9, STB10, and STB11.

Methodology:

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal per hour
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal per hour * (24 hr/day)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal per hour * (8760 hr/yr) * (1 ton/2000 lbs)
Potential VOC Pounds per Hour (for resin and gel coat) = Density of coating (lb/gal) * Gal per hour * Emission Factor
Potential VOC Pounds per Day (for resin and gel coat) = Density of coating (lb/gal) * Gal per hour * (24 hr/day) * Emission Factor
Potential VOC Tons per Year (for resin and gel coat) = Density of coating (lb/gal) * Gal per :hour * (8760 hr/yr) * (1 ton/2000 lbs) * Emission Factor
Particulate Potential Tons per Year = (gal/hr) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) * (8760 hrs/yr) * (1 ton/2000 lbs)
Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids) * Transfer Efficiency

Controlled emission rate = uncontrolled emission rate * (1 - control efficiency)

Emission Factors are based on new AP42 factors which were taken from the "CFA Emission Models for the Reinforced Plastics Industries", February, 1998.

Appendix A: Emission Calculations

HAP Emissions - Potential to Emit

Company Name: Thunderbird Products, Inc
 Address: 2200 Monroe Street, Decatur, IN 46733
 CP#: SSM001-11987-00031
 Plt ID: 00031
 Permit Review: LQ/EVP
 Date: April 20, 2000

Material	Density (Lb/Gal)	Gallons of Material (gal/unit)	Maximum (unit/hour)	Weight % Xylene	Weight % Toluene	Weight % Methanol	Weight % Glycol Ethers	Weight % Styrene	Weight % Methyl Methacrylate	Styrene Emission Factor %	MMA Emission Factor %	Xylene Emission s (ton/yr)	Toluene Emissions (ton/yr)	Methanol Emissions (ton/yr)	Glycol Ethers Emissions (ton/yr)	Methyl Methacrylat e Emissions (ton/yr)	Styrene Emissions (ton/yr)	
Paint Application																		
IMRON Tint 531U	8.35	0.720000	0.025	1.00%	3.00%	0.00%	0.00%	0.00%	0.00%	N/A	N/A	0.01	0.02	0.00	0.00	0.00	0.00	
IMRON Additive 1923	8.06	0.173096	0.025	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	N/A	N/A	0.00	0.00	0.00	0.00	0.00	0.00	
IMRON Reducer 848	7.5	0.093688	0.025	0.00%	0.00%	0.00%	10.00%	0.00%	0.00%	N/A	N/A	0.00	0.00	0.00	0.01	0.00	0.00	
IMRON Accelerator 8	8.15	0.013216	0.025	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	N/A	N/A	0.00	0.00	0.00	0.00	0.00	0.00	
Cleaning Solvent	6.61	0.500000	0.025	9.00%	9.00%	3.00%	0.00%	0.00%	0.00%	N/A	N/A	0.03	0.03	0.01	0.00	0.00	0.00	
											FACILITY	0.04	0.05	0.01	0.01	0.00	0.00	
Fiberglass Processes (gal/hr)																		
AME 1000 Resin	9.02	23.6975		0.00%	0.00%	0.00%	0.00%	33.00%	0.00%	3.55%	N/A	0.00	0.00	0.00	0.00	0.00	33.24	
AME 5000 Resin	9.02	7.4200		0.00%	0.00%	0.00%	0.00%	32.00%	0.00%	3.42%	N/A	0.00	0.00	0.00	0.00	0.00	10.03	
Cream Gel	11.06	0.1865		0.00%	0.00%	0.00%	0.00%	30.58%	3.00%	13.61%	2.50%	0.00	0.00	0.00	0.00	0.23	1.23	
Interior White Gel	11.67	0.8911		0.00%	0.00%	0.00%	0.00%	29.16%	0.00%	12.98%	0.00%	0.00	0.00	0.00	0.00	0.00	5.91	
Lt Greige Gel	11	0.0795		0.00%	0.00%	0.00%	0.00%	29.75%	3.00%	13.24%	2.50%	0.00	0.00	0.00	0.00	0.00	0.51	
Shell White Gel	11.08	2.6680		0.00%	0.00%	0.00%	0.00%	30.05%	2.00%	13.37%	1.50%	0.00	0.00	0.00	0.00	1.94	17.31	
Manual Resin Application (gal/hr)																		
AME 1000 Resin	9.02	0.984000		0.00%	0.00%	0.00%	0.00%	33.00%	0.00%	4.15%	N/A	0.00	0.00	0.00	0.00	0.00	1.61	
AME 5000 Resin	9.02	0.312000		0.00%	0.00%	0.00%	0.00%	32.00%	0.00%	4.03%	N/A	0.00	0.00	0.00	0.00	0.00	0.50	
											FACILITY	0.00	0.00	0.00	0.00	2.17	70.33	
										Weight % 1,3 Dioxolan	Weight % 1,2,Butylene Oxide						1,2, Butylen Emissions (ton/yr)	1,3 Dioxolane Emissions (tons/yr)
Adhesive Application (gal/unit)																		
Whisper SP-1582H	9.89	4.03	0.25	0.00%	0.00%	0.00%	0.00%	0.40%	0.50%	N/A	N/A	0.00	0.00	0.00	0.00	0.22	0.17	
Contact IA-1541D	10.75	2.95	0.25	0.00%	0.00%	0.00%	0.00%	0.40%	0.50%	N/A	N/A	0.00	0.00	0.00	0.00	0.17	0.14	
Plexus MA425	8.26	1.91	0.25	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	N/A	N/A	0.00	0.00	0.00	0.00	0.00	0.00	
Plaexus MA555	8.26	11.53	0.25	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	N/A	N/A	0.00	0.00	0.00	0.00	0.00	0.00	
											FACILITY	0.00	0.00	0.00	0.00	0.39	0.31	

METHODOLOGY

Single HAP : 33.24
 Total HAPs : 73.31

HAPS emission rate (tons/yr) = Density (lb/gal) * Gal of Material (gal/unit) * Maximum (unit/hr) * Weight % HAP * 8760 hrs/yr * 1 ton/2000 lbs